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THE CANADIAN DENTAL ASSOCIATION

Journal

L'ASSOCIATION DENTAIRE CANADIENNE

January
December, 1957
Volume 23
Number

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Volume 23
Number 1
Toronto
January 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

The Professional Man as a Citizen*

DONALD M. FLEMING, B.A., LL.B., Q.C., M.P., Toronto**

If we refer to the dictionary we find "profession" defined as "vocation, calling, especially one that involves some branch of learning or science". There is in these words the sense of being called or summoned to this particular career.

Each of us is an individual, conscious alike of our association with other individuals and of the fact that each of us stands on his own feet as a creature of God endowed with a sacred personality. Man is a gregarious animal. For more than 99% of the human race, life is lived in relationship with others. For the professional man more than all others, solitude is virtually impossible. Indeed, one of the things that makes life so interesting for the professional man is that it brings him in contact with other people.

The individual's association widens through his family, his community, his country, and the world. The sense of community grows as the world shrinks. The day is coming when people will travel the Atlantic as a common daily experience. On one occasion I flew the Atlantic in exactly ten hours. I recall that when my grandfather, something over 100 years ago, came to this Province from Ireland, it took him six weeks by ship to cross the ocean.

The professional man is set in the midst of life. For him there is no escape from all that is part of community life and the responsibilities which attend it.

What is it that distinguishes the professional man?

In the first place, he has incurred a debt to the public by reason of his education. It has probably cost the taxpayer over $20,000.00 to educate him for his profession. He may have incurred some private indebtedness as well. It is natural

* Address delivered before the Toronto Academy of Dentistry, October 22nd, 1956 on the occasion of the Annual Dinner Meeting.

** Member of Parliament for Toronto—Eglinton.

that he should have a sense of indebtedness to the public.

The second distinguishing feature of a professional man should be his respect for learning and science. By the time he has completed his professional education he must have learned to reverence learning for its own sake, as well as for its mere professional value. A reverence for learning for its own sake, it seems to me, is one of the things that will distinguish the professional man. Do you recall the words of Thomas Carlyle: "A lawyer without history or literature is a mechanic, a mere working mason; if he possesses some knowledge of these he may venture to call himself an architect." Lord Boyd Orr has said that science has accomplished more since the turn of the century than in the previous 2,000 years. Learning must always increase; it can never stand still. We must respect and encourage the advance of science.

In the third place, the professional man must hold a high conception of his calling. The public will never value us as a profession any more highly than we value ourselves. Don't, I beg of you, underrate your profession.

Fourth, is the quality of motivation. The first aim of the professional man must be to help those who require the services which he is in a position to render. By its very nature his profession qualifies him for service. If money-making is a man's first objective in life he simply does not belong in a profession. In saying that, I am not unmindful of the fact that the labourer is worthy of his hire.

Fifth is the sense of inter-dependence with other members of his profession. In any profession you will find a sense of group consciousness, and the more highly the profession is developed, the more highly is this sense of group consciousness developed. Francis Bacon said: "I hold every man a debtor to his profession; from which as men of course seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to be a help and ornament thereto." From the group the member derives the advantages of protection, status and dignity. We meet as brothers, not competitors. At the same time we must reflect that whatever the member does affects and reflects on all other members of the group, for good or ill.

Sixth, and last of these attributes which distinguish the professional man is the ethical standard, which must always be the ultimate distinction of the professional man, for in addition to all the public and external disciplines of life, he submits himself to a special and internal discipline of the profession. The ethical standard of a profession is not easy to enforce or to conform with. It requires on the part of those charged with its enforcement the most constant vigilance. When the professional man is on his own there will be many severe tests, and they will not be confined to his resourcefulness, industry, ability and courtesy. There is no place in the profession for the person who is not prepared to conform to the ethical standards of the profession. That is why the rigid test of admission to the professional college is not something to be regretted, but rather, it is something to be upheld. That also is why instruction in the ethics of the profession must play such an important part in the college curriculum.

If I might summarize what I have thus far endeavoured to say, I would claim that the professional man is a man with a sense of responsibility. That is the badge of maturity in the profession and the individual member of it. If it is present in the group it may properly call itself a profession. If it is absent, that group has no right to call itself a profession, nothwithstanding all the skills it may possess.

The sense of responsibility has at least three relationships—to the profession itself, to the patient or client, and to the public.

A profession owes itself a place of self-respect, and every member owes that respect to his profession. There must be a family sense of responsibility to the

member, because he is indeed a member of the family. The obligation of discipline is aimed at keeping the family home respectable. The ethical standard will never become rusty if the sense of responsibility to the profession as such is developed on the part of the members.

But the sense of responsibility will not be confined internally to the group. The sense of responsibility is owed to the client, to those who come to the professional man for the assistance of his services. There must be an undivided loyalty to the interests of the patient or client. There must be the most scrupulous honesty and fair dealing with him, and the service must be unselfish at least to this extent, that the interests of the patient or client must come first.

The professional man will be conscious of his responsibility to the public even outside the clientele. The professional man owes a duty to the public, whether the public makes use of his services or not. He looks to the public through public law-making bodies for the protection which the law is wont to afford to the professional group. In return, the professional man must deserve public support for his group ideals and organization. His exemplary citizenship must be expressed in terms like leadership. I am going to ask everyone here tonight this question: "What value do you place on your citizenship? Do you approach it with a sense of responsibility?" That is the test of citizenship. In my tour of Africa two years ago, finding people who were clamouring for a greater measure of self-government, I had to ask myself quite often, "Is their sense of responsibility yet sufficiently developed?" Rights and responsibilities are co-extensive, and the great need of our time, in a political as well as in a moral sense, is to cease to take for granted the rights and privileges we enjoy. In entering upon our rights, we should do so with a sense of obligation to those who have gone before us, to our contemporaries, and to those who will come after us, and for whom we must be always building. The room at Charlottetown in which the Fathers of Confederation met in 1864 commemorates that occasion with a simple plaque bearing the words "They builded better than they knew." May the same be said of us!

Ruskin said: "If we build, let us think that we build forever. Let it not be for present delight, nor for present use alone; let it be such work as our descendants will thank us for."

Did a word I uttered two or three minutes ago escape you? It was the word "leadership". There are those—and I do not think they are the most thoughtful of our people—who have the idea that democracy is a system which does not require leadership. Democracy does need leadership. To those in the professional ranks who have enjoyed the benefits of higher education, the benefits of professional standards, it is inevitable that the demands of public service in a democracy will come with special force and appeal. The professional man can not be one of those who looks down on public service as something beneath him.

Edmund Burke once said "All that is needed for the triumph of evil is that good men do nothing." Democracy stands in greater danger from the cynic and the apathetic, indifferent citizen than it does from external peril.

Democracy has been and is suffering from two dread evils—indifference and cynicism. That creeping paralysis which distrustfully looks upon people serving in public life as merely persons seeking to advance themselves and their personal interests, or coveting the high places, contributed little to the improvement of the standards of public life. A great man uttered these words in reference to the call to public service: "To the evasions by which men would fain excuse themselves from public duties . . . we must by no means give ear. It is asserted . . . that political life attracts in general only utterly worthless men . . . Therefore, it is said, a wise man does not grasp the reins of government, since he cannot restrain the mad lunges of the untamed

rabble, nor does a free man strive against vile and savage opponents, or submit to the lash of insult . . . As if a good and brave and highminded man could find a more honourable reason for entering public life than the desire to avoid the rule of a scoundrel . . . And who can approve of the exception . . . that the wise man will not assume a role in political life except under the compulsion of circumstances? . . . You cannot aid the Senate at a moment's notice . . . unless you are (trained) to do so . . ." Those words might have been written in today's newspaper — so relevant are they to our day and generation. They were uttered in the year 106 B.C. by the immortal Cicero.

We must not measure our duty to the community or the public in too narrow terms. So much depends on public service, and the things which we could not hope to do as individuals. The professional man, whether he feels qualified for public service in an elective office or not, will find ample scope for service in community effort. Tolstoi said: "The vocation of every man and woman is to serve the people." If our talent be small, there is still a part, however small, for us to play in our community. According to the Chinese proverb, "It is better to light a candle than to curse the darkness."

The youth we see growing up around us today faces a very different world and life from that upon which we looked out 15, 25 or 50 years ago. This is the age of the nuclear bomb. This is the age of unprecedented destruction. Because this is a very different kind of world, our sense of community duty must be proportionately higher. The turn of the century found men filled with hope and confidence. Now the intervening years have chilled them! The late Chancellor Wallace of Queen's has described that experience in these words: "It was an inspiring prospect for those who, like myself, reached manhood as the new century came in. God was in His Heaven. All was right with the world. Progress was inevitable. The world was getting better and better. Two devastating world wars have taken place since then, and the apostles of progress have suffered from severe shock. Evil has shown itself to be an active, terrifying force, and it has to be met head-on. People have become cynical about progress and the young are bewildered by the welter of counsels."

It is not this generation of youth that is responsible for the welter of confusion we see in the world today. The responsibility rests on the generations who have preceded them.

It will rest with the professional man always to do more than his share in paying the debts of society. No truer remark was ever uttered in the City of Toronto than the statement made by the late Lord Fletcher Moulton some seventeen years ago. He said: "That country is greatest in which the greatest number of people assume unimposed obligations." There are duties the law lays upon us that we must discharge, however painful they may be, but the test of our response to the duties we owe as professional men and women will depend upon the extent to which we rise to meet the obligations that are imposed not from without, but from within.

Be thankful every morning when you get up that you have something to do that day which must be done, whether you like it or not. Being forced to work, and forced to do your best, will breed in you temperance and self-control, diligence and strength of will, cheerfulness and contentment, and a hundred virtues which the idle never know.

Charles Kingsley

Health Education in Relation to Dental Care Needs and Demand in the Elgin-St. Thomas Health Unit Area

C. I. COBURN, D.D.S., D.D.P.H.* and R. M. GRAINGER, D.D.S., D.D.P.H., M.Sc.D.**

Eleven years ago a dental health education program, under the initial sponsorship of the Red Cross Society, was instituted at Welland, Ontario[1], with the object of demonstrating the practicability of public education in the prevention or control of dental defects. From this beginning the plan, the costs of which are now largely taken care of through National Health Grants, has been gradually extended to cover five counties and four major cities in Ontario, involving over one fourth of the Province's population. Its wider spread is limited only by the availability of dentists with specialized training in public health. The Dental Health Officers are, in a technical sense, employees of local boards of health and serve as organizers and teachers endeavouring to promote good dental health through every available community channel. Their duties exclude any form of treatment service although considerable time is spent on diagnosis.

The dental health program in the Elgin-St. Thomas area was begun in the summer of 1951 when a Dental Health Officer (C.I.C.), a secretary and a clerk were employed by the Health Unit. The Health Unit itself was organized in 1945 to provide public health services to rural and urban municipalities in the county.

Elgin County, situated on the north shore of Lake Erie, is approximately 60 miles long and varies from 10 to 18 miles in width with an area of about 700 square miles (Fig. 1). It has a diverse agriculture. Tobacco is grown extensively giving employment to many transient workers who often are accompanied by their families. The people are chiefly of English, Irish or Scotch origin, although in late years many immigrants of various nationalities have moved into the area. The county with a population of approximately 55,000, contains one city, St. Thomas; one town, Aylmer; seven incorporated villages and the following townships: Aldborough, Bayham, Dunwich, Malahide, South Dorchester, Southwold and Yarmouth.

St. Thomas (the county seat), a typical urban centre, has a population of approximately 19,000. Several new industries have located in the city during the past few years, providing employment for many additional workers.

Aylmer, a thriving municipality with a population of about 4,000, is in the centre of a prosperous farming district. A large

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** Dental Statistics and Research Section, Division of Medical Statistics, Ontario Department of Health

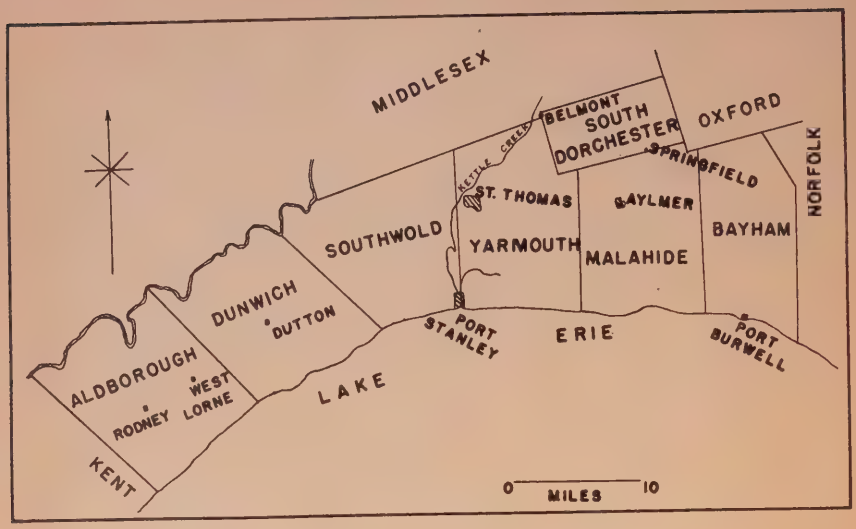

FIGURE 1 — County of Elgin

tobacco processing plant and several smaller industries form the industrial background of the town.

Natural fluorides in optimal amounts are present in underground waters in the north-east section of the county. Aylmer obtains its water supply from deep drilled wells having a natural fluoride content of from 1.0 to 1.2 ppm. South Dorchester Township, situated north of Alymer, has fluorides present in variable amounts in the majority of private wells. All other municipalities in the county have no significant amounts of fluorides in private or public water supplies.

Dental facilities are concentrated in St. Thomas and Aylmer. St. Thomas has thirteen dentists, Aylmer has three, and one is located in each of the villages of Dutton and Rodney. The over-all ratio of dentists to population is about 1:3000. Children in more remote sections of the county are 30 miles distant from St. Thomas. A few of these, however, seek dental care in adjacent counties. No specialists in Surgery, Orthodontics, Periodontics or Paedodontics are resident in the county; these services have to be sought in the city of London, some 20 miles north of St. Thomas.

It was apparent from the beginning that two important factors in the program required attention:

(1) The extent to which local practitioners would co-operate and participate in reducing the backlog of existing defects and assume care of new child patients as a result of dental health instruction in schools. Participation of the dentists was vital to the success of the plan.

(2) The effectiveness of instruction in dental protective measures in the schools of the county, particularly in the two regions where natural water fluoridation has existed for the life-time of native-born children. This was an unknown problem for observation and study.

Dental Health Education Program

The main effort in health education is centred on the county's primary schools. Dental examinations are necessary for a statistical evaluation of the program, and serve as the basis for notifying parents of their children's dental needs so that they will seek the necessary treatment. In addition, however, there must be a presentation of health information calculated to interest and possibly motivate the pupil to take a greater personal interest in his oral health. In this respect carefully selected films or film strips have been found valuable. Nutritional films are shown as frequently as strictly dental films in an effort to counteract faulty dietary habits. Essays are prepared by the pupils based on these presentations.

The interest of the teachers is invaluable in helping to institute and maintain a program of dental health. Various projects can be employed in the classroom to foster good health. One enterprising city school conducted a rat feeding experiment to demonstrate the value of good nutrition, and two other schools are planning the same project for the present year. "Follow-up" methods are necessary with respect to return of dental notices to the school indicating completion of work. It would appear that the various levels of dental care observed in schools are very largely proportionate to the active interest and co-operation of teachers in the program.

Of importance to the operation of a school dental program is the assistance of the public health nurse. Problems concerning the dental welfare of individual children can often be solved by the nurse visiting the home.

Health Unit personnel frequently receive invitations to address lay groups or discuss health topics over the radio. The effectiveness of these talks is difficult to judge but they no doubt contribute in a general way to the success of a health program.

Source of Data

Three complete dental surveys have been made since 1951. In the first one (1951-52) all children were examined and conditions recorded. In the second and third surveys all children were examined so that parents could be notified of defects but the dental conditions were tabulated only for a systematic sampling of the children. For the second survey dental conditions of every fifth child as the names appeared on the classroom lists were tabulated. For the third survey every third child aged 5, 7, 9, 11 or 13 years of age, in the order in which they reported for examination, was included in the sample. Examinations were made using mouth mirrors and explorers of uniform design. A portable light was used when necessary. No radiographs were taken. The selection of the criteria, the methods of charting, tabulation and analysis of the records followed the standard methodology of the Division of Medical Statistics of the Ontario Health Department[2]. Age adjusted rates and averages were based on the 1951-52 sample sizes. In the comparisons of fluoride versus non-fluoride regions data for South Dorchester were dropped because the fluoride level in private wells varies considerably in that township.

Findings

The extent to which the children have received all necessary dental care is shown in Table I which gives the percentage of children who have had all carious permanent and deciduous teeth repaired, or removed when beyond repair. The slightest evidence of caries even in exfoliating anterior deciduous teeth, for example, would exclude the child from this category. Children immune* to caries were included. It will be noted that in ages 9, 11, 13 the improvement in dental health is more substantial than in younger children. The teeth of many of the younger children are beyond restorative

* By immune is meant showing no caries experience at time of examination.

TABLE I

Percentage of Children Having Dental Caries Treatment Completed or Never Needed at Time of Examination.

Elgin County

Age Last Birthday	Children Examined in School Years		
	1951-52	1953-54	1955-56
5	32.4 (454)	41.4 (87)	54.2 (144)
6	19.1 (829)	29.7 (212)	29.4 (330)
7	15.7 (904)	18.5 (233)	24.2 (359)
9	6.5 (911)	16.8 (190)	24.2 (331)
11	12.0 (803)	24.0 (192)	35.7 (280)
13	16.2 (624)	32.5 (169)	42.3 (234)
Age adjusted percentage	15.5 (4525)	25.4 (1083)	32.7 (1678)

( ) Number of children examined.

Increases in percentages from 1951-52 to 1955-56 are beyond chance at each specific age.

TABLE III

Percentage of Children Exhibiting No Caries Experience (i.e. having no decayed, missing or filled teeth) at the Time of Examination.

Elgin County

Age Last Birthday	Dentition	Year of Dental Examination		
		1951-52	1953-54	1955-56
5	Deciduous Teeth	26.4 (454)	28.7 (87)	43.1 (144)
7	Permanent Teeth	47.6 (904)	71.2 (233)	81.3 (359)
9		15.4 (911)	13.2 (190)	44.4 (331)
11		13.0 (803)	17.2 (192)	22.5 (280)
13		10.7 (624)	16.0 (169)	14.5 (234)
Age adjusted percentage using 1951-52 figures for number of children examined		23.3	30.6	43.4

( ) Number of children examined.

The increase in percentages from 1951-52 to 1955-56 is beyond chance at each specific age.

measures when they first enter school. A contributing factor to this neglect is a traditional reluctance on the part of some parents to provide care for the deciduous dentition.

The backlog of carious permanent and deciduous teeth not beyond repair in fluoride and non-fluoride regions is shown in Table II. An interval of about four years separates the first and third surveys. The average number of untreated teeth in both areas has been reduced by more than one half. Dental conditions in the fluoride region both before and after the educational program were better than in the non-fluoride region.

The percentage of children who were clinically free of dental caries of the permanent or deciduous teeth at specific ages is shown in Table III, and has increased for all ages over the four year period.

In Table IV the caries free children are separated into fluoride and non-fluoride regions. The over-all increase in immunity in both groups is of great interest. The sample size of Aylmer children in the 1955-56 survey is restricted by the one-third sampling scheme, but for two speci-

TABLE II

Average Number of Permanent or Deciduous Teeth Per Child Requiring Restorations at the Time of Examination According to Residence in Fluoride and Non-Fluoride Regions.

Elgin County

Age Last Birthday	Aylmer 1.0 ppm F		Malahide, Bayham, Aldborough, Dunwich, Southwold, Yarmouth, St. Thomas No significant fluorides	
	1951-52	1955-56	1951-52	1955-56
7	2.09 (85)	1.50 (30)	3.63 (826)	1.96 (313)
9	3.18 (84)	1.11 (36)	3.84 (822)	2.04 (285)
11	3.38 (56)	1.00 (22)	3.04 (753)	1.38 (253)
13	2.58 (51)	0.96 (21)	3.66 (573)	1.33 (206)
Age adjusted average	2.81	1.16	3.55	1.72

) Number of children examined.

TABLE IV

Percentage of Children Exhibiting No Caries Experience (i.e. having no decayed, missing or filled teeth) at the Time of Examination According to Residence in Fluoride and Non-Fluoride Regions.

Elgin County

Age Last Birthday	Dentition	Fluoride Region (Aylmer)		Non-Fluoride Regions	
		1951-52	1955-56	1951-52	1955-56
5	Deciduous	32.9 (73)	57.1* (28)	25.4 (381)	40.5* (116)
7	Permanent Teeth	65.8 (114)	80.4 (46)	44.6 (827)	81.5* (313)
9		29.6 (108)	67.4* (46)	13.8 (820)	40.7* (285)
11		21.8 (79)	37.0 (27)	12.1 (730)	20.9* (253)
13		18.3 (77)	14.3 (28)	9.8 (561)	14.6 (206)
Age adjusted percentage		35.3	53.7	21.7	41.9

( ) Number of children examined.

* The increases in percentages from 1951-52 to 1955-56 are beyond chance for the indicated age specific pairs of samples.

fic ages there was a significant increase in caries free children. The expected higher percentages of caries free children in the fluoride region[3] over the non-fluoride region are apparent.

TABLE V

Mean Number of Decayed, Missing or Filled Teeth Per Child at the Time of Examination According to Residence in Fluoride and Non-Fluoride Regions.

Elgin County

Age Last Birthday	Dentition	Fluoride (Aylmer)		Non-Fluoride	
		1951-52	1955-56	1951-52	1955-56
6	Deciduous (d.e.f.)	3.22 (77)	3.07 (30)	5.51 (240)	4.98 (290)
7	Permanent Teeth (D.M.F.)	0.14 (85)	0.26 (35)	1.35 (258)	0.39* (313)
9		1.79 (84)	0.92* (36)	2.58 (272)	1.50* (285)
11		2.71 (56)	1.77 (22)	3.81 (243)	2.81* (253)
13		3.62 (51)	3.81 (21)	6.03 (186)	4.43* (206)
Age adjusted average		2.18	1.82	3.67	2.01

( ) Number of children examined.

* Differences between the indicated age specific pairs of means for 1951-52 and 1955-56 are beyond chance as tested using variances estimated from Ontario Health Department tables.

Table V shows the average number of decayed, missing or filled permanent and deciduous teeth for children residing in fluoride and non-fluoride regions. These are grouped according to specific ages and time of examination. As in Table IV the children in the fluoride region have at each age less decayed, missing or filled teeth than the children in the non-fluoride region. The difference in the age adjusted averages is a bit less than the 60% usually reported for continuous residents[2] due no doubt to the inclusion of non-continuous residence children along with those native to the regions. Significantly lower average numbers of D.M.F. teeth were clearly found after the four years of dental education in the non-fluoride regions and at one age there was a significantly lower average number of D.M.F. teeth in the fluoride region as well.

Discussion

The majority of parents in the Health Unit area (which has no municipal treatment clinics) when informed of their children's dental need were willing to obtain and pay for the required treatment. An over-all level of 32.7 per cent of children with caries treatment completed or never needed (Table I) implies that many other children may have had only one or two small defects. In the first survey the number of children without caries defects was less than 7% in some townships.

To be realistic, the program had to take into consideration the ability of private practitioners to assume additional burdens in patient load. The co-operation of the dentists in this respect, it should be emphasized, has met all expectations. It was not expected that all children who took dental notices home would immediately visit their dentist, nor would this have been possible because of the shortage of dental manpower. The initial response to the notices, however, was encouraging and local practitioners for the most part were not subjected to impossible demands at the beginning of the program. Presumably, the increase in child patient load must have resulted in deferral of treatment for adults in many instances. A factor which probably made it easier for the dentists to take on more child patients was the acceptance of early and regular care. Children visited the dentist at an earlier age or when the defects were of a minor nature thus avoiding more time-consuming operations. In this manner more dental care services per dentist were possible. As might be expected more children in urban centres received attention than in outlying rural districts from which a visit to the dentist meant a trip to town not only for the child but for the parent. In all areas and for various reasons a certain proportion of children received no dental care at any time.

The reduction to about one half in the numbers of teeth needing treatment must be considered as a very important contribution to the health of the elementary school population. In the natural fluoride town of Aylmer the educational program

reduced the backlog from a level only slightly better than in the non-fluoride regions to an average of close to one tooth per child. Thus it is apparent that water fluoridation is most effective when it forms an integral part of the broader dental health education program. Conversely it seems apparent that much of the benefits of water fluoridation may be lost if the individual neglects early treatment of the caries which occurs even in the presence of water fluoridation.

The rather sharp increase in caries immune children was certainly more than was hoped for although the findings are in keeping with those of the Welland and District Health Unit[1], and the St. Catherines-Lincoln County Health Unit[4] which are non-fluoride regions. Considering that teaching emphasis was placed on good nutrition and a reduction in the consumption of sweet foods between meals, it may be that the increased caries resistance has come about as the result of some general improvement in these factors. Direct evidence of actual improvements in nutrition and in eating habits has not been obtained for this paper and the gathering of such data would be very costly and time-consuming.

It is of interest to note that the increase in immunity to caries is also apparent in the fluoride region (Aylmer). Careful study of continuous residents is indicated to establish clearly how much the adoption of customary individual control measures can enhance the effect of water fluoridation.

The general increase in the level of treatment and a greater resistance to dental caries would indicate that education of the public in oral health practices can be effective and practicable.

The public's increasing interest in health matters clearly indicates the necessity for intensified dental research so that caries control methods taught may be as specific as possible. At the same time dental health programs should be maintained and expanded in order that the results of this research may be widely disseminated.

If at some time in the future a prepayment dental treatment program were introduced, certain advantages could be gained if it were preceded with and accompanied by intensive dental health education programs. These advantages would be:

(a) Public appreciation for a service would be vastly greater if it were something for which they had previously been willing to pay, than if it had never before been of interest.

(b) The backlog of treatment needs would be found reduced to the order of one half making it possible to provide better service to more people from the very beginning.

(c) The inspection of school children by the Dental Health Officer would afford an ethical and effective supervision of treatment services, as practitioners would realize that their work would be observed and compared with that of others.

(d) The wealth of data on the prevalence and incidence of dental defects would make it possible to plan for the treatment required with great accuracy and enable the results of the service to be evaluated.

(e) The continued teaching of control measures to the public would offer great hope for the reduction of the incidence of dental defects to lower than present levels. With this reduction in need would come an eventual lowering of the cost of providing the treatment.

Conclusions and Recommendations

1. A substantial increase in the number of children who have had all dental caries treatment completed, together with a reduction in the average backlog of treatment requirements, has been accomplished by the dental practitioners in Elgin County in response to a demand created by a dental health education program. Since the dentists were fully employed at the start of the program, it is presumed that the increase in dental services for children was made possible by a deferral of treatment for adults in many instances, but perhaps to a large extent it was due to early dental care when incipient lesions could be readily treated, thus avoiding time-consuming operations occasioned by neglect. In this manner more patients per dental man-hour could be accommodated.

2. A significant decrease in the caries attack rates over the four year period of the educational program suggests the practicability of reducing the incidence of dental disease through health education. There is also evidence that the benefits of water fluoridation in a community may be enhanced through the teaching and individual acceptance of good nutritional and oral hygiene habits.

3. At the beginning of the program, the dental treatment backlog for the children receiving fluoridated water was not a great deal lower than in the non-fluoride regions despite a much lower attack rate in the fluoride region. It seems clear that the benefits of water fluoridation may be lost to a considerable extent if early treatment is neglected for those carious lesions which develop even in the presence of water fluoridation.

4. It is suggested that a prepayment dental treatment program which might be introduced in the future could have a much greater degree of success if it were preceded with and accompanied by a general dental education program.

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The Professional Man's Extra Income Tax Burden*

MILTON R. CULBERT, D.D.S., Toronto, Ontario

As we open this twenty-seventh annual meeting of the Great Lakes Society of Orthodontists here in Ottawa, on the northeastern fringe of our large territory, it is most gratifying to note that registration figures already indicate that we will have another very large attendance this year. Considering that registration figures have been consistently excellent throughout the history of the society, and that the average member spends some twenty hours in lectures and clinics during the two and one half day meetings, it will be obvious to anyone that this zeal to broaden our knowledge, to keep pace with research, and to develop finer techniques, results directly in better care for the public.

Of course all vocations are organized into societies, associations, guilds, unions, or whatever their members choose to call them. All these organizations hold conventions to deliberate on matters of mutual interest. While some may regard a trade union and a professional guild as poles apart, they are in essence the same, in that they are a banding together of workers of a calling. But while for such

* Presidential Address: Great Lakes Society of Orthodontists, Ottawa, October 8th, 1956.

purpose they are the same, a comparison between a professional society and a trade union reveals a startling and an all important difference. The professional man devotes the major part of his time at his meetings to study ways and means of improving his knowledge, his skill, and his services. The trade unionist on the other hand, devotes his time at his meetings to study ways and means of improving his income and his personal benefits.

What are the results of this fundamental difference? In recent years the trade unionist has gained a position of high privilege and freedom from responsibility, with sick benefits, vacation with pay, etc., and now pensions. Meanwhile the professional man, too preoccupied with his quest for skill to bother about his financial position, has seen those of lesser skills and lesser responsibilities leaving him far behind in those fields.

At this point someone always likes to remind us that the professional man is high on the income scale and therefore should never have the bad grace to complain. But the statistics do not disclose the ugly facts that the professional man is paying much higher income taxes than people in industry earning comparable incomes, and that he works much longer hours for that dubious privilege.

To illustrate this, let us consider the position of the dentist in the economy of today. We will take the Canadian dentist as our example, because we are better acquainted with the figures on this side of the border. American members will note the similarities and differences with more than passing interest when they realize that the revenue departments of this country, the U.S.A., and Great Britain have developed the profitable custom of studying one another's taxation gimmicks. As international borders are no barriers to these gimmicks, some of ours may creep into your tax system, and some of yours in turn may creep into ours.

The dentist begins his career with many thousands of dollars worth of mental machinery which he can neither capitalize nor depreciate. He conditions himself to work long tedious hours in a stance that would kill an ordinary workman, under tension that would wreck the average executive, and in quarters that would induce claustrophobia in many normal individuals. As his own two hands earn his income, that income ceases abruptly the moment he gets sick, and his expenses carry on. At his death the most valuable asset that he has carefully built up over the years, his goodwill, perishes with him.

What does the government do to encourage him to carry on and to serve humanity, and to guide his son into his useful footsteps while the country is so desperately short of dentists? Let us look at some figures and find out. Let us say the dentist is earning the average income for Canada of under eight thousand dollars per year. Compare his tax situation with that of his business man brother who is earning exactly the same amount. The brother has the right to deduct his annual maximum pension plan payment of fifteen hundred dollars from his taxable income. The dentist is denied that right. So not only does the dentist pay three hundred dollars extra on the non-deductable fifteen hundred, but in order to buy into a pension plan to reach financial parity with his brother, he must earn an equivalent additional amount which would cost well over another three hundred dollars taxes every year. So in reality our dentist is out over six hundred dollars more than his business man brother on this one item alone. If the brother runs his own business as the dentist does, he has in addition an elastic expense account that permits him to charge off business promotion, business travel, and many other business comforts. The dentist's expenses are restricted to his bare office overhead. Conscientious dentists who toil overtime hours to oblige extra people net very little reward from such effort, as the extra dollars of income are subjected to bigger tax bites.

Two years ago a Canadian physician's claim for convention expenses was rejected by the tax department as excessive.

On the subsequent appeal, the tax department endeavoured in part to justify its stand on the ground that the government had made no specific regulation on allowances for convention expenses for professional men. As a result, they denied *all* the professional men their right to convention expenses from that time forward. Following a storm of protest, the government granted expenses for two conventions in Canada only. Further protests from our associations have recently won another concession, so now Canadians can claim expenses for two meetings per annum anywhere. But even concerning conventions there is still injustice: for example, teachers in our professional colleges still cannot deduct one cent of the cost of attending meetings. They still cannot deduct one cent for the purchase of books that they must have to do their job. With twenty thousand more professors required to meet this country's educational needs for the next decade, these are some samples of the myopic and idiotic lack of policy for encouraging young men to enter the professions as practitioners and teachers. Needless to say, every young citizen has the right to know the truth before entering a university, and any vocational guidance that omits this information is rendering a grave disservice to the youth.

Why do these preposterous injustices exist? The government has been aware of these conditions: it has been bombarded with briefs and petitions from our associations for years. But what politicians are going to consider a petition which represents a few hundred professional men and their votes, against the interests of large organized groups, such as trade unions, which represent several hundred thousand votes, especially if those voters may soon seek paid health plans? As a national health scheme may not be too far distant, the government has told us that we must be prepared to look after more people to thus handle the job. But what political party, during the acute housing shortage, would have the ideals, or the courage, to tell the tradesmen that they must work on Saturdays, or to tell the bricklayers that they must lay more than the minimum number of bricks per day?

In their idealism the professions have been unaware of the need to arm themselves with bargaining power. If progress cannot be made by an enlightened government policy, it is obvious that the professions must so arm themselves. Surgeons, physicians, dentists, etc., cannot be replaced, unless they train their own replacements themselves in the universities. Their numbers may not amount to several hundred thousand, as in a trade union for example, but their smaller numbers are counterbalanced by their indispensible importance. As the problems of the various groups are common, the professions could work in concert to at least obtain the same tax benefits as the trade unionist or the business man where pensions are concerned.

If we fail to learn how to defend ourselves with the same weapons that are being used against us in this economic struggle, it is easy to predict the outcome. Not only will the cost of our services soar to the inflated level of other labour, but the continued tax discrimination against practitioners and teachers will further reduce our dwindling numbers to the point where health schemes will be impossible, and those in private practice will be physically incapable of handling more than a fraction of the multiplying population.

Unfortunatey the public has a very distorted, and therefore unsympathetic picture of the professional man, and usually a very exaggerated estimate of the professional man's affluence. As the facts become publicized, recruitment will be affected to a much graver degree. Here also we must learn to defend ourselves. Since the war, officers of medical and dental organizations have found out and reported that a colossal job of public relations must be done which will necessitate the employment of experts of that field, at a cost which no present society budget can support.

Present day conditions demand that

our professional bodies devote time to the study of our own protection in order to cope with social, economic, and political pressures. According to the wording of our constitution (Great Lakes Society of Orthodontists), these tasks are the responsibilities of two committees, the legislative committee and the public relations committee. Until now their activities have been confined to our internal affairs, so it is obvious that their duties must soon be expanded. A component Society's committees are better situated to study state and provincial matters than the parent continental body. These committees should be instructed to study external affairs affecting the status of the professions, to report these findings and their advice to the society and to the American Association, and to recommend consultations and lectures from experts of those fields when necessary.

Treatment and Differential Diagnosis of Thrush

DONALD S. MOORE, D.D.S., Hamilton, Ontario.

Mycostatin (Squibb Nystatin) is a new effective drug for treating thrush, caused by candida albicans. It is also effective in the prevention and treatment of intestinal moniliasis. Reports, in the dental literature, state that a diabetic given wide spectrum antibiotics may develop such a serious monilial infection as a result of suppressing the bacterial flora, that the whole digestive tract becomes involved. Mycostatin is effective in preventing such a disease from arising.

Mycostatin is a new antibiotic derived from cultures of streptomyces noursei. Subsequent to the discovery of mycostatin, a second anti fungus antibiotic, actidione, was isolated from cultures of streptomyces noursei. Mycostatin can be used successfully to prevent or treat intestinal moniliasis associated with the oral administration of the commonly used wide spectrum antibiotics, as well as to treat thrush of the mouth.

Mycostatin inhibits or kills all species of fungi and yeasts that have been tested, with the exception of actinomycetes. It is inactive against bacteria. Its greatest effect is on yeastlike fungi in the growing stage and less active against the spores. Since this drug is poorly absorbed from the digestive tract it exerts its effect primarily in the lumen of the intestine. It is almost insoluble in water, but readily soluble in 70% ethanol. However, oral administration has cleared up lesions of the skin and mucosa in a few instances and generalized infections have been favourably influenced. It can be seen that it works best by direct contact. Repeated efforts to develop strains of candida albicans resistant to mycostatin have been unsuccessful.

Mycostatin is virtually non toxic, following its normal oral administration, as no systemic toxicity or sensitivity reactions have been reported. Very large doses may cause nausea, vomiting, or diarrhea in a few cases. The usual dose of 500,000 unit tablets three times a day by mouth, can be doubled if necessary without producing any side effects. Mycostatin is most stable as a dry powder. In suspensions and solutions, it deteriorates rapidly unless frozen at 25 degrees centigrade.

Widespread infections of thrush in the mouths of infants involving all the soft tissues that had been treated unsuccessfully with other antifungicides, responded very quickly to the use of this new wonder drug. In the mouth of one infant there remained patches within the cheek for a month, that refused to clear up while other antifungicidal agents were used. A dermatitis on the buttocks and on the stomach persisted for a month in spite of treatment. The application of mycostatin to the mouth dramatically eliminated the resistant patches within twenty-four hours. The dermatitis that had a red raw appearance as the surface layers had desquamated, also rapidly healed within three days without local applications to the skin. Mycostatin was used by powdering the tablet, mixing it with honey and applying it to the tissues of the mouth after each feeding. One would not ordinarily use a sugar in any form because it aids in the growth of fungus. However, with this powerful antibiotic the honey was used to hold the powder together, to help it to stick to the tissues, and also to counteract the taste.

Thrush is usually found in debilitated adults and young children, and in infants. It is rare in adults except when it is associated with debilitating diseases such as diabetes, carcinoma, dysentry and tuberculosis. It is possible that the reason thrush occurs in the mouth of diabetics is because of the high carbohydrate concentration of all the body secretions. The disease is common in institutions where numerous infants are crowded together or where mouth hygiene is neglected. Although it is stated that it is impossible for thrush to occur on healthy mucous membranes, it certainly does occur in the mouths of healthy infants. There is also a difference of opinion on whether babies born of mothers with vaginal moniliasis have a greater chance of developing thrush.

Roth et al [1] in 1952 showed that systemic cortisone therapy increased the severity of infection induced by candida albicans and Scherr[2] in 1953 showed that "STH" reversed this effect. However, hydrocortisone, applied topically, caused rapid reduction of erythema and itching. Wide spectrum antibiotics, such as aureomycin, increase the growth of Candida albicans. Aureomycin, in particular, should not be prescribed for diabetics because of severe to fatal intestinal moniliasis that have resulted from aureomycin therapy. Cultures, to which benadryl or aureomycin-paraben were added, enhanced the growth of candida albicans to the greatest extent. Cepacol showed no effect on some strains, inhibited other strains and enhanced the growth of others.

The lesions of thrush first appear usually as white spots, resembling coagulated milk, on the tongue, on the buccal and labial mucosa, and on the palate. These spots are firmly adherent to the underlying tissue and if removed forcefully leave a raw bleeding surface and the infection quickly spreads to cover the denuded area again.

Systemic symptoms are not marked. Infants will often refuse the bottle; adults will complain of a sweetish acid odour and discomfort on eating. Diagnosis is made by the appearance of the lesions, by being able to peel off the white patches, and by straining the material removed with methyline blue, or treating it with 10% potassium hydroxide which will show up the monilia forms when examined under the microscope. The fact that the white patches can be removed helps in a differential diagnosis (Fig. 1-6) that rules out lichen planus and leukoplakia in adults. The severe systemic con-

FIGURE 1

Thrush of the Buccal Sulcus and Gingiva.

FIGURE 2

Thrush of the Cheek. White curd like patches that can be peeled off leaving a raw bleeding surface. Smears are useful in making the diagnosis.

FIGURE 3

Lichen Planus of the Cheek and Tongue. White lace-like raised lines of hyperkeratinized epithelium. White patches on the tongue. In 50% of the cases there are skin lesions on the arms and legs that are small raised red areas. There is a psychosomatic etiological factor involved with Lichen Planus. An attack often follows an emotional crisis or the sudden death of a member of the family.

FIGURE 4

Leukoplakia of the lip and floor of the mouth from smoking a pack of cigarettes a day for a period of one year.

FIGURE 5

The same lip as shown in Fig. 5 four months after effective measures were taken to remove the irritation.

FIGURE 6

Non specific membranous stomatitis. White areas that cannot be peeled off.

stitutional symptoms that occur with diphtheria help one to rule out such a disease; however, smears and cultures are a great help.

While oral moniliasis or thrush is usually readily controlled, it is much more resistant to treatment if it is allowed to spread to the gastro intestinal tract. The prognosis of systemic moniliasis was often unfavourable until this new antibiotic was discovered. The writer has found thrush in the mouths of more than one member of a family; such as, where the wife, a diabetic with all her teeth, had a severe case, and the husband, edentulous, had sore spots under his denture which on examination proved to be a thrush infection.

It is often felt that a predisposing cause of moniliasis is a marked deficiency of Vitamin B complex and therefore it is wise to prescribe Vitamin B complex.

Mycostatin also may prove to be effective in eliminating the type of fungus-like organisms that are considered by some investigators as partly responsible for the production of calculus and pocket formations about the teeth.

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505 Medical Arts Bldg.,
Hamilton, Ontario.

TORONTO ACADEMY OF DENTISTRY
SECOND STATED MEETING

OSLER HALL **8.15 P.M.**

THURSDAY, FEBRUARY 21, 1957

FROM THE COMMUNITY TO THE PRACTITIONER

The Second Stated Meeting, climaxing the Academy's Workshop-Conference sessions held earlier during the same day at the Royal York Hotel, will be devoted to a symposium presentation, at which the three distinguished consultants to the Workshop-Conference will interpret to the practising dentist some of the conclusions and recommendations emerging from the Workshop discussions which are of significance to him. Since the proceedings of the Workshop-Conference will ultimately be released to lay organizations and thus to the public at the neighbourhood level, this symposium offers a unique opportunity for the practising dentist to obtain advance information on long-term community planning in relation to school children as it affects private dental practice.

The Workshop-Conference participants will also be the guests of the Academy at this meeting which offers further opportunity for strengthening relationships between the dental practitioner and the community in which he practices.

The essayists on the symposium are:—

1. **H. R. McLAREN, D.D.S., D.D.P.H., F.A.P.H.A.**, Assistant Chief, Dental Health Division, Department of National Health & Welfare, Ottawa.
   Graduate, Faculty of Dentistry, University of Toronto, 1936—D.D.S.
   Diplomate, School of Hygiene, University of Toronto, 1946—D.D.P.H.
2. **MURIEL UPRICHARD, B.A., M.A., Ph.D.**, Assistant Professor (Educational Psychology) School of Nursing, University of Toronto.
   Graduate, Queen's University—B.A., Smith College—M.A.
   University of London, England—Ph.D.
3. **J. M. WISAN, D.D.S., M.S.P.H.**, Chief, Dental Health Section, Department of Public Health, Philadelphia, Pa.
   Graduate, New York University, 1918—D.D.S.
   Graduate, Columbia University, 1944—M.S.P.H.
   Diplomate, American Board of Dental Public Health, 1954.

National Dental Examining Board of Canada

HAROLD N. BEACH, D.D.S., Ottawa, Ontario.*

The National Dental Examining Board was established in June 1952 by Federal Statute. As early as September 1902 at the first meeting of the Canadian Dental Association in Montreal one of the matters discussed was the possibility of the eventual establishment of a National Dental Examining Board.

For some seven years prior to 1951 the Canadian Dental Association's Council on Dental Education attempted at their meetings to lay down some general principles in respect to this matter and as a result of their work the Board of Governors of the Canadian Dental Association at their annual meeting in May 1950 resolved that the various Provincial Bodies be invited to a meeting for organizational purposes. Accordingly, the Provinces having responded agreeably, a meeting of the representatives of all Provincial Licencing Bodies of the Dental Profession in Canada was arranged at the head office of the Canadian Dental Association in February 1951. An important point considered was that the establishment of a National Dental Examining Board would stabilize the qualification for the practice of Dentistry upon a national basis.

The meeting adopted as amended, the recommendations by the Council on Dental Education in regard to the establishment of a National Dental Examining Board embodying three general principles:

(1) That the qualifying conditions shall be recognized as the highest in Canada.

(2) That the rules and regulations governing the examinations shall be acceptable to the Licencing Bodies concerned.

(3) That the examinations will be conducted in a manner fair and equitable to all concerned.

The meeting unanimously carried a resolution "that the Executive of the Canadian Dental Association proceed with the . . . incorporation of the National Dental Examining Board". Members were appointed to the Board by the ten Provincial Licencing Bodies and also two members from the Council.

There are many advantages to the holder of a National Dental Examining Board certificate.

First, he may register this certificate with any or all Canadian Provincial Licencing Boards for the purpose of securing a licence to practise in a respective province.

True, the Province of Quebec has not yet enacted amending legislation to the Dental Act of that province for the acceptance by law of the certificate of the National Dental Examining Board as qualification for practice. However, the College of Dental Surgeons of the Province of Quebec has gone on record as approving the acceptance of the NDEB certificate and it is hoped that the enabling legislation for the same will soon be passed by the Legislative Assembly.

The Licensure Board of British Columbia requires an NDEB certificate holder to pass an examination in clinical dentistry before registration is granted.

Successful candidates then, are possessors of a qualifying certificate that is backed by organized Dentistry as being of the highest order obtainable and acceptable to all Provincial Licencing Bodies.

This is a most valuable possession to a practising Dentist in that his certificate is acceptable to any Canadian Dental Licencing Body and will become even more useful as a necessity for a single high standard for Canadian Dentistry becomes increasingly evident.

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* Registrar-Secretary, N.D.E.B.

ABSTRACTS

Treatment of the Acute Alveolar Abscess

HOWARD L. WOLFSOHN, D.D.S.

Little has been written about the treatment of acute dento-alveolar abscess during the early stages of its development. Authors seldom agree to the type of treatment prior to the occurrence of a swelling, although the majority advocate incision and drainage of the area after considerable swelling appears. The acute alveolar abscess is a localized collection of pus in the alveolar bone at the apex of the tooth, following the death of the pulp, and resulting from direct extension of infection from the pulp through the apical foramen into the periapical tissue.

Clinically, there is a pericementitis which leads to slight pain on percussion. This is followed by throbbing, which gradually intensifies until there is extreme discomfort on percussion. The tooth may extrude slightly and become slightly mobile. As a path of least resistance is found in the bone, a swelling may start in the adjacent soft tissues. The swelling progresses and may become grotesquely noticeable from an extra-oral view. The swelling is accompanied by fever and malaise when systemic involvement takes place. Frequently, the pain diminishes markedly as the swelling increases in size.

Before frank swelling occurs, there is a similarity to an acute apical periodontitis, only with far more severity. To rule out the possibility of the latter condition, the pulp chamber should first be opened to determine whether or not relief of pain may be obtained in this manner. If there is relief, the condition is probably periodontitis, and no further palliative treatment is necessary. If there is not relief at all from opening into the pulp chamber, an artificial sinus tract must be produced. The patient should be premedicated, preferably with penicillin, to minimize bacteremia or spread of infection.

The area is completely anaesthetized and a semi-lunar incision is made near the apex of the tooth. A mucoperiosteal flap is reflected and, by means of a bone bur or a large round bur, a hole is drilled through the cortical layer of bone at the area of the root apex. When the medullary bone is contacted, there is less resistance to the bur. When the area of infection is reached, the bur encounters no resistance and drops into the space. At this point, the patient may experience a quick stab of pain.

The patient is given postoperative instructions which include the use of heat packs or an infra red lamp for twenty minutes every two or three hours for a prescribed length of time, and hot saline rinses. A sedative may be prescribed, but is rarely needed. The patient should be prepared to expect some swelling the prescribed heat applications being used

to relieve this swelling. The sutures can be removed in five to seven days, followed by endodontic therapy. A radiograph taken a week or so after this first operation will usually show a small radiolucent area at the area of the root apex, if it is a case of an acute alveolar abscess. This may be due partially to the opening made by the bur and partially by the dissolution of bone by inflammatory processes of the body due to the infection in the bone. The area should disappear in several months following proper endodontic therapy and obturation of the canal.

The New York State Dental Journal — November, 1956, Vol. 22, No. 9.

The Additive Partial Denture— Its Principles and Design

Dr. M. M. De VAN

The term additive is employed to designate a partial denture, the design of which is so planned that other units may be added to it without depriving the patient of the use of the denture for longer than a few hours. These additions may constitute an immediate replacement prior to the removal of the condemned natural tooth or teeth.

An additive partial denture has built into its initial design metallic parts facilitating quicker additions without seriously jeopardizing the stability or retention of the appliance.

The principles behind the additive partial denture design are five in number: (1) the use of all available tooth and tissue bearings in the mouth; (2) maximum use of contact bearings in proximal and occlusal surfaces; (3) the employment of infra-bulge proximal retainers; (4) the use of broad, ribbonlike major connectors in all bilateral partial dentures; (5) the modification of the occlusal surfaces of the remaining natural teeth, and the artificial teeth, with the neutrocentric concept in mind; this with the objective of increasing the mobility of the natural teeth and increasing the stability of the artificial teeth.

The additive principle in partial denture design has helped us to cope with the public's objection to partial dentures based on cost, comfort and lasting qualities.

This design has been of extreme help in dealing with that individual who, through necessity or an unwise sense of thrift, desires to become completely edentulous. Many of these individuals, due to peculiar personality traits, will not do well with complete dentures, precipitously necessitated. Complete dentures have functional limitations that no skill or sagacity can overcome. These patients should be conditioned for complete dentures by way of additive partial dentures.

North West Dentistry, Vol. 35, No. 6. November 1956.

Effect of Fluoridated Public Water Supplies on Dental Caries Prevalence

FRANCIS A. ARNOLD, Jr., D.D.S., H. TRENDLEY DEAN, D.D.S., PHILIP JAY, D.D.S., and JOHN W. KNUTSON, D.D.S., Dr. P.H.

From the results obtained in Grand Rapids after 10 years of water fluoridation, it is quite clear that this procedure is remarkably effective in reducing the incidence of dental caries. These observations are in accord with the results of similar studies conducted under separate auspices. The scientific evidence is conclusive, therefore, that water fluoridation is an effective public health procedure for producing a substantial reduction in the incidence of dental caries.

According to this study, the beneficial effects of fluoridated water are not confined to persons drinking the water since birth. The results suggest that some benefit was obtained by persons whose teeth had already formed or erupted when they started drinking fluoridated water. The effects on the teeth of adults in these cities have not as yet been ascertained. However, the fact that a reduction in caries was observed for teeth which had already been calcified when fluoridation was started indicates that some beneficial effect may be gained by older age groups.

The possibility of an increase in dental fluorosis in a community after fluoridation has received considerable discussion. After 10 years of fluoridation in Grand Rapids, the percentage of children classed as having fluorosis has increased, but, as anticipated, this increase is confined to the milder forms. As pointed out previously, the signs of the milder forms of fluorosis caused by ingestion of water containing 1 p.p.m. fluoride as a rule do not appear on the anterior teeth. It is the plan of this study to continue the observations to evaluate this factor fully. Thus far, however, the ingestion of the Grand Rapids water supply has not produced any undesirable cosmetic effect in the form of objectionable dental fluorosis on the anterior teeth.

U.S. Department of Health, Education, and Welfare.

Role and Evaluation of Gold Foil, Silicate Cement and Acrylic Resins in Operative Dentistry

CHARLES M. STEBNER, D.D.S.

The role of any restorative material is to restore and repair a natural tooth so that the tooth may serve during the expected life of the patient. An attempt has been made to determine how far these materials fall short in their prescribed role. In evaluating these materials it is desirable to compare them with the ideal material that the profession desires and should constantly strive toward.

Twenty-three salient factors have been considered under five main headings: (1) health; (2) function; (3) cavity seal; (4) technique and manipulation and (5) aesthetics.

Under health the following were considered: (1) bacterial invasion; (2) chemical trauma and heat generation; (3) mechanical trauma; (4) gingival irritation.

Four factors were considered in respect to function: (1) strength; (2) stability; (3) service and (4) solubility.

Considering cavity seal, the following considerations are pertinent: (1) co-efficiency of expansion; (2) setting shrinkage; (3) bevel protection; (4) water absorption; (5) odour.

Ease of manipulation should consider: (1) time and effort; (2) adaptation; (3) teaching; (4) operative comfort; (5) expense.

Under aesthetics: (1) colour; (2) translucency; (3) permanency; (4) staining; (5) carvability.

The total evaluation shows that gold foil is 80.5% of the ideal restorative material, silicate cement rates 60.5% and acrylic resin a poor third at 47%. The following table shows the summary evaluation:

	Ideal	Foil	Silicate	Acrylics
A. Health	40.0%	32.0%	24.0%	19.0%
B. Function ...	20.0%	17.0%	8.0%	7.0%
C. Cavity Seal .	20.0%	19.0%	14.0%	6.0%
D. Technique ..	10.0%	6.0%	10.0%	7.0%
E. Aesthetic ...	10.0%	6.5%	4.5%	8.0%
TOTALS ..	100.0%	80.5%	60.5%	47.0%

The average score of five teachers and widely known clinical dentists, Miles Markley, Herbert D. Coy, Lester E. Myers, Rex G. Ingraham and Arne Romes (Group 1), gave gold foil 83.6 per cent, silicate cement 63.2 and acrylic resin 54. Averages of five students of dental materials research, George Paffenbarger, Eugene Skinner, Ralph Phillips, Robert Nelsen and F. A. Peyton (Group 2) is as follows: gold foil 82, silicate cement 54.9, and acrylic resin 46.4 per cent. The combined groups of ten men allow gold foil 82.8, silicate cement 59 and acrylic resin 50.2 per cent.

The Journal of the American Dental Assoc. December 1956, Vol. 53, No. 6.

Lung Cancer in Relation to Smoking

RICHARD DOLL, M.D., M.R.C.P., and A. BRADFORD HILL, C.B.E., F.R.S.

From our retrospective studies of the smoking habits of nearly 1,500 patients with lung cancer and over 3,000 patients with other illnesses we concluded that if large groups of persons of different smoking habits were observed for a number of years they would reveal distinct differences in their rates of mortality from lung cancer. They would show, we believed, (1) a higher mortality in smokers than in non-smokers, (2) a higher mortality in heavy smokers than in light smokers, (3) a higher mortality in cigarette smokers than in pipe smokers, and (4) a higher mortality in those who continued to smoke than in those who gave it up. In each case the expected result has appeared in the prospective inquiry here reported. These results are evident in spite of the fact that our method of inquiry is such as constantly to underestimate the mortality differences. The reason for the underestimate is that our classifications are based, for the most part, upon a statement of the smoking habits at one point of time. We have seldom been able to take previous habits into account, and any subsequent changes have been unknown to us. As a result we shall sometimes have included in the light smoking group persons who had previously smoked heavily for a long time; we shall sometimes have included as "pure" pipe smokers persons who had previously smoked cigarettes and vice versa; we shall sometimes have continued to class as smokers persons who have given up. All such errors in classification must inevitably have reduced the, nevertheless, clear associations between the mortality from lung cancer and the smoking of cigarettes which we have observed in these British doctors.

British Medical Journal, November 10, 1956

Diagnostic aids and vital pulp therapy for deciduous teeth

RALPH E. McDONALD, D.D.S., M.S., Indianapolis.

The success in vital pulp therapy for deciduous teeth depends on accurate preoperative diagnosis and a consideration of the physical condition of the child.

Present-day methods of electric pulp testing are not reliable in predicting early inflammatory and degenerative changes in the pulp.

The roentgenogram will not always provide reliable information regarding the proximity of the carious lesion to the pulp tissue nor will it show early periapical infection in deciduous teeth. The roentgenogram is, however, a valuable diagnostic aid since evidence of calcified masses in the pulp horn, adjacent to the carious lesion or at the entrance of the pulp canal, is an indication of advanced pulpal degeneration.

The absence of a toothache cannot be a criterion for deciduous pulp therapy. A toothache at night, or the spontaneous kind other than that associated with eating, should be considered evidence of degenerative changes in the pulp.

Pinpoint carious exposures may be associated with a mild and probably reversible type of inflammation. Large carious exposures with or without a serous exudate are associated with degenerative changes often down in the pulp canals, and occasionally microscopic evidence of internal resorption can be obtained.

Profuse haemorrhage from an exposed pulp is evidence of extensive inflammation and hyperemia and a contra-indication for any type of vital pulp therapy.

The age of the patient may be an important consideration in pulp diagnosis.

Children with a chronic illness or a lowered resistance should not be considered for vital pulp therapy; infection is a remote possibility.

One procedure should not be adapted to all vital exposures in deciduous teeth. The decision whether the desired result will be derived from pulp capping, pulp curettage, pulpotomy or extraction should be based on a careful analysis.

The Journal of the American Dental Association, July 1956.

Planning Posterior Bridges

JOHN D. ADAMS, D.D.S.

The foremost principle in treatment planning for posterior bridges is the understanding of the type of bridge needed in relation to the biomechanical requirements of the patient. Technical procedures are of little value when improperly applied. Judgement gained through actual experience leads to a better understanding of bridge indications and results in technics which for the most part become routine procedures adaptable to each requirement. By concentrating on the development of better treatment plans, the dentist cannot help but enjoy

the satisfaction of constructing better bridges.

Satisfaction in bridgework increases with doing. The more work undertaken, the more experience gained, and the easier treatment planning becomes. Posterior bridges may be divided into two general classes: the short span bridge and the long span bridge. Many failures in bridgework can be traced to lack of understanding of the retention requirements necessary for the success of the bridge.

In short span bridges, the minimum requirement for retention is the MOD inlay modified, and should be used only under the most ideal conditions. Many more short span bridges would be successful if the nonrigid connector were used, generally at the anterior retainer, which in most instances, is the retainer for the weaker abutment.

Long span bridges require rigid construction with extracoronal retention. The problems are much more complex with this type of bridge than with any other.

Porcelain is the material of choice for pontics and should be used unless the space is so small as to be considered impractical. The acrylic resin should be used only when porcelain is not indicated. The Sanitary pontic, the Tru-pontic and the long pin facing serve well in the majority of posterior bridges. The long span bridge with a pier becomes two short span bridges, and when a nonrigid connector is used with the pier, will work out successfully.

Treatment planning, when employed, ties all these elements together and provides the dentist with the practical knowledge necessary for success and satisfaction in practice.

The Journal of the American Dental Association. December 1956, Vol. 53, No. 6.

Defects of the Clotting Mechanism in Blood Dyscrasias and Their Significance in Oral Surgery

SHELDON M. JACOBSON, D.D.S.

The defects that hinder effective blood coagulation are nearly always due to either lack of a plasma coagulation factor or serious diminution or absence of platelets. Information concerning this is usually volunteered by the patient or readily obtained from a history, and often it is obtained from inspection of the patient. Confirmation and more detailed data can be learned from routine and easily performed laboratory tests.

Any surgical treatment afforded these patients should be as conservative as possible and should be performed only to give relief obtainable in no other way. They should be premedicated in order to correct the specific abnormality as much as possible, and procedures should be performed with the greatest possible care. Adequate precautions to prevent infection are essential. Frequently, a period of postoperative bleeding is to be expected, and sufficient preparations to control this and to compensate for it should be made in advance.

Oral Surgery, Oral Medicine and Oral Pathology. Dec. 1956, Vol. 9, No. 12.

EDITORIAL

The Provision of Emergency Care

Elsewhere in this issue notice is given that the Vancouver and District Dental Society has established a twenty-four hour emergency service for patients unable to obtain the care of their own dentists. It is our understanding that two or three other communities in Canada receive the benefits of such a plan inaugurated by their local dental societies.

A Telephone Answering Service is retained and a directory listing indicates the telephone number to be called in the event that an emergent need for a dentist arises. A roster of dentists is maintained and they are contacted on a rotational basis from the list supplied to the Answering Service.

There are three basic considerations which differentiate a profession from other vocations — specialized knowledge, continuing education, and *service*.

The word profession has always been especially identified with the concept of service. A member of a profession, because of the fiduciary characteristics of his calling, serves. He is interested in helping people, and he measures his success by what he does for mankind and not alone by what he does for himself.

It is unreasonable to assume in any of the health professions that problems or difficulties arise only from nine to five. It may be agreed that if patients assumed proper responsibilities for their dental health requirements there would be no emergent toothache problems. Undoubtedly an assiduous attention to early and regular dental care would reduce, dramatically, the need for emergent care. But we must be realistic and understand that as long as our patients are human we cannot reasonably expect an Utopian regard for the measures which we feel are necessary.

Many problems, however, other than those related with toothache develop from time to time. A Public Relations Bulletin issued several months ago by the Association made mention of an occurrence wherein a man of some importance arrived in one of our large cities to address a meeting of consequence. Upon his arrival an anterior tooth became separated from his denture and repeated attempts to obtain the services of a dentist, met with no success. Although one might regard this as only a minor incident, nevertheless it resulted in considerable adverse publicity for the profession in the newspapers.

There was a time when people were prepared to accept a period of edentulousness before insertion of dentures. This attitude has almost disappeared and often considerable difficulty is encountered in being able to retain the denture for a sufficiently long period of time to permit a non self-curing reline. Most

people now regard their dentitions, whether they be artificial or real, as necessities, and are quite unprepared to appear in public with any of their anterior teeth missing.

In virtually all larger centres the medical profession maintains a source from whence assistance in locating a physician may be drawn. It is difficult to imagine a situation where such attention is not available should a family not be able to contact its own physician. The very vital nature of the service makes it mandatory for the medical profession to provide for its ministrations twenty-four hours a day, seven days a week. Most certainly it is often difficult to contact a specific physician when a need arises but at least the services of a substitute are available for the care of the emergent condition.

Dentistry too, as a vital and necessary health service, should assume the obligation and responsibility which the word profession entails. The mere fact that many societies have taken no steps to develop a programme for emergent care would almost indicate that we feel our services are of insufficient import to warrant attention to such needs. Surely, we cannot believe that. Our modern approach to dental care is predicated upon a consideration of the factors which predispose to oral diseases and great effort is made in order to have patients avoid the rather serious consequences of neglect. We lay rather great stress upon this terminal result. Yet when problems in this area develop beyond the hours of usual office routine it is sometimes almost impossible for patients to receive the care they require. To compound the seriousness even further, many such patients turn to their physicians in order to obtain relief from their distress. The rather serious public and professional relations problems thereby created should be reasonably apparent.

A central source, then, from which emergent care could be supplied is more than desirable. It is a responsibility in the provision of professional health service.

CORRESPONDENCE

Dear Mr. Editor:

It seems to me the members of the profession across the Dominion should reach agreement among themselves as to what is a science and what is a craft regarding the subject of prosthetics. It is accepted that the principles composed thro' the common effort of the basic Scientists Prothero, Snow, Bonwill, Gyzi, Cristhensen and others are a true knowledge of prosthetics as a science: It is contrary to right reason to teach these principles in theory but not in practice. It is only within the last three years that I became aware that this is being done. The schools across the country profess to teach a scientific technique. The technique as given to the profession by the late Rudolph Hanau has been their exclusive choice. So far so good, but let's examine what has evolved. Hanau spent extra effort, financial outlay, labor and time simplifying his technique to bring it within the field of the general practitioner. This he succeeded in doing. He listed 106 steps in his book on technique. If it can be said that any one section is most important, I would say the section — steps 12 to 32 inclusive—is the crux of the procedure. This part of the technique is based on the work of Snow and Gilmer. Yet these steps—12 to 32 inclusive have been the ones left out by those who are in authority to teach. What has been substituted is some non-scientific notion occurring to the mind of the individual teacher. To take an instrument that has been designed for a specific purpose and use it according to one's own individual notion, I think is sheer nonsense. I think also that the craftsmen sense this even tho' they don't understand the reason or lack of reasoning behind it. Some have said it is too late now to do anything

about it. This too is nonsense. The solution is obvious. Teach prosthetics as a science in practice. This implies putting our own house in order. The two vocations—the members of the profession and the craftsmen should be collateral. Now let's examine what the latter include in a brochure published in the September '56 Journal of the Ontario Dental Association. They state, "that by recognition (by the legislature) of a separate craft, dental technicians would have an enhanced status in society."

In a letter of mine published in the Journal of the Ontario Dental Association, Dec. 1955, I wrote — "From this it would seem to be apparent that when a mechanical instrument is used, the articulation obtained instead of being in harmony with the patient's jaw movements, the patient is compelled to accommodate his jaw movements to the articulation given him. This he cannot do with comfort and this, it seems to me is the cause of developing sore spots and deterioration of ridges over a long period. The fault is not with the technician but with the technique." I hope the members of the profession will perceive the implication in this statement. Sore spots and deterioration of ridges are the results of continued irritation. When prosthetics is practised as a craft these irritations cannot be avoided. When practised as a science they can. It is well established that continued irritations may cause malignancies. It would seem to be in keeping with our status as a profession to shake off our apathy and call upon our wills to put forth the effort to practise the prosthetic branch of dentistry as a science. I think the profession have been the dupes for the suggestion that to practise prosthetics as a science is impractical. Over a period of twenty years I have found the very opposite to be true. It is an illusion to think one saves time or is able to increase his material gain by practising denture work as a craft. The individual who changes his method will find denture work practised as a science much more rewarding, not only in the way of public relations with his patients but in a material way as well. He will also find that his status in society is enhanced and there will still be the chasm between the two callings which can only be bridged by members of the craft entering the profession by way of the College.

To the young men of the profession I say this: Have patience: When the time comes that you are given the chance to learn prosthetics as a science in practice, have faith that what you are being taught is the truth. When the time comes that you are given the opportunity to learn denture prosthetics as a science in practice be assured that the effort you put forth will be well worth while. You will become a better dentist, not only in prosthetics but in all other branches as well. You will have learned that principles have meaning and it is the part of wisdom to follow them.

In the November issue of the Journal of the Canadian Dental Association is reported the death of John Alexander Bothwell. Whatever this letter is worth only the future will decide. I wish to pay this tribute to Dr. Bothwell: If I had not been taught the principles of prosthetics as a science in practice by him, I could not now be writing this letter. In the words of the late Dr. Cody, spoken some years ago at a dental convention, — "We should strive for perfection, rather than resort to expediency."

Yours sincerely,

H. A. Hartford,
715 2nd Ave. E.,
Owen Sound, Ont.

BOOK REVIEWS

Clinical Endodontics—A Manual of Scientific Endodontics. Prepared by: Sommer, Ostrander, Crowley. Published by: W. B. Saunders Company. Pages 497, with illustrations. Price $10.50.

The scientific approach to Endodontic problems during the past 15 to 20 years has seen great progress due to a very large extent to the vigorous efforts of the Michigan group. The recently released text by Drs. Ralph Sommers and F. Darl Ostrander and Miss Mary Crowley, "Scientific Endodontia" will be of tremendous value to the general practitioner as well as to those who do a

considerable amount of this work.

All phases of accepted Endodontic procedures are covered in detail and the absolute necessity for proven sterility is stressed.

"The integrity of a tooth does not depend upon the pulp but rather on the periodontal membrane" is a quote which may be credited to the Michigan group. Too often teeth are lost because of pulpal involvement which could be restored to a healthy serviceable condition. Many of these are of great strategic importance not only to the patient but to the operator as well. So often a finer replacement —fixed or removable may be provided the patient when proper Endodontic treatment is rendered where indicated—resulting in a happier patient and a happier dentist.

The text is an excellent guide as to when surgical intervention is indicated and when good regeneration of involved periapical tissues may be expected by conservative treatment alone.

From diagnosis and selection of cases to be treated through proper canal preparation — Mechanical and Bio-mechanical Drug therapy — Technique of Cultures to prove Sterility of the canal and adjacent periapical tissues — obliteration of the canal by a hermetic seal — to the final restoration of the coronal portion of the tooth are covered in great detail.

Scientific Endodontia should be a must in the library of every dentist.

F. F. Baker

Clinical Operative Dentistry—Edited by: William John Simon, Dean and Professor of Operative Dentistry, State University of Iowa. Published by: W. B. Saunders Company. Pages: 374, with 650 illustrations. Price $9.50.

Here is a book which, I think, will be warmly received by the general practitioner. It is probably the most concentrated effort yet made to cover the field of operative dentistry in a text less than an inch thick, and containing less than four hundred pages. Yet, this book comprises contribution from forty-five of the leading practitioners, scholars and teachers of operative dentistry in the United States, as well as two contributions from Canadians.

To accomplish this, all unnecessary explanations of terms, lengthy descriptions of instruments and their methods of use have been omitted. The result is a book for the clinician that has however, little value for the not so far advanced student.

The general make up of the book is extremely simple, there being a chapter devoted to each of the commonly used restorative materials in order of their present day importance. These are preceeded by a chapter on the basic principles of operative dentistry.

In each chapter cavity preparation is carefully discussed and illustrated, great care being taken to point out the differences in cavity preparation to accommodate the properties of the various filling materials. Ceramics is not included, being considered a specialty in itself.

I highly recommend this book to the general practitioner of dentistry for both reference and reading, for he will find in it many things discussed that are both new and old but none the less valued.

L. J. Archibald.

Applied Dental Materials. Prepared by: John N. Anderson, B.D.S. (Sheff.) Published by: The Ryerson Press, Toronto. Pages: 414 with illustrations. Price: $9.00.

The author, in purposely limiting the scope of this text to practical knowledge, has produced a most valuable guide to the manipulation of dental materials. It will definitely repay any reader's attention. In its up-to-the minute coverage, it successfully avoids the dreariness of both step-by-step techniques and of academic minutiae.

This well balanced book can be highly recommended to the profession, from the youngest student to the most experienced practitioner.

J. R. Fletcher

Dynamics Of Oral Diagnosis—Prepared by: Cheraskin and Langley. Published by: The Year Book Publishers, Inc. Pages: 523, with illustrations. Price : $16.00.

The different approach to this subject, taken by the authors, has merit and shows planning and insight.

The book is divided into two parts, Oral Medicine and Oral Diagnosis.

That part on oral diagnosis, which is unfortunately the second part of the book, works logically from the gross appraisal of the patient to the final diagnosis, covering all the conventional phases of diagnosis in between. However, included along with this conventional approach, the anatomy and physiology of the part under observa-

tion is briefly and concisely given. This takes us back to basic principles and greatly aids in a clearer understanding of signs and symptoms.

The oral medicine part of the book takes up diseases and disorders under such headings as: Diseases due to Biologic agents, Physical agents, Hormonal disturbances, Neoplasms, etc. In this way, all signs and symptoms are collected in one place for each condition—a desirable approach.

In the discussion of the various conditions, a uniform system is followed, gross appraisal of the patient, examination of head and neck, of the oral cavity, and finally, recommended treatment.

The book is well written and abundantly illustrated, but unfortunately there is a complete absence of color plates.

It is a valuable text for quick and ready reference, with a guide to treatment, for the practitioner and student.

R. H. Bingham.

THE ASSOCIATION

British Columbia Council Acquires Property

Property has been acquired in Vancouver for the purpose of establishing an administrative headquarters for dentistry in British Columbia. The property is situated at the southwest corner of Cardero and Robson Streets, purchased for $28,000. Some months ago the Council of the College of Dental Surgeons appointed a committee, known as the combined quarters committee, to study the establishment of suitable administration offices. The result is the purchase of property on which a building is to be erected which will be adequate to cover the requirements of the B. C. College of Dental Surgeons, the British Columbia Dental Association, the Vancouver & District Dental Society and study clubs.

500,000 Canadians now Drinking Fluoridated Water

In 23 municipalities some half million persons are now drinking fluoridated water according to recent tabulation. The number of people obtaining the benefit of fluoridation has increased approximately by 200,000 during the past year. As soon as certain legal technicalities are cleared away, it is anticipated that a considerable increase in the number of municipalities adopting fluoridation will occur.

Halifax Announces Fluoridation

Both Halifax and Dartmouth in Nova Scotia have been fluoridating their water supply since early summer. To date Halifax is the largest municipality to adopt fluoridation in Canada. Official announcement of the introduction of this public health measure was delayed until late October. It is notable that not a single protest was received during the interval. Tabulated data for the province of Nova Scotia is as follows:

Halifax	June 11/56	100,000
Dartmouth	July 3/56	30,000
Kentville	Feb. 16/56	5,000

Fluoridation in United States

The U.S. Public Health Services reports that, as of October 1st, over 30 million persons in 1,426 municipalities are now drinking fluoridated water in U.S. During 1956 some six million people in 171 municipalities have been added. The report indicates that more than half of the cities with populations between 500,000 and one million have fluoridation programmes in operation.

Health League of Canada Designates Dental Health Day

National Health Week has become an annual event of great importance to stimulate public interest in better health for Canadians. February 3-9, 1957 is national health week in Canada.

This year the Health League has designated Wednesday, February 6th as Dental Health Day and requests cooperation of dental organizations. Programme spots have been assured by the Canadian Broadcasting Corporation on Dominion, Trans-Canada and Trans-Canada-Eastern networks. Endeavour is underway to establish a television programme. News releases have been prepared and voluntary lay groups are being contacted requesting cooperation. All possible media are being employed in the effort to make Dental Health Day successful.

Chant Report Regarding Dental Technicians

Report has now been made by a Committee appointed by The Honorable Mr. Martin, Minister of Health & Welfare for the Province of British Columbia. The purpose of the committee was to consider the proposals set forth in Bill 121 particularly the ones pertaining to direct dealings between dental technicians and the public for the repair of dentures and those pertaining to the association of dentists and dental technicians. The committee was comprised of representatives of the College of Dental Surgeons of B.C., the Dental Laboratories Association, the Dental Technicians' Association, Mr. A. Porteous, Secretary of the Department of Health & Welfare, and Dean S. N. F. Chant of the University of British Columbia as Chairman. The Committee held nine meetings between December 1955 and April 1956.

The report points out that the level of remuneration for dental technicians in relationship to the required skill is not high enough. It is also stated that the spread of remuneration between the dental technicians and the dentist is a cause of public discontent. But, it is also pointed out that this is not a fault of the dentist as the income of the dentist is below those of similar professional status. Repairs to dentures is considered, pointing out that in the case of some repairs new impressions are required while others are "clean ones that can be fitted together precisely". At some length the report discusses repairs, stating that some repairs can be made satisfactorily by well qualified technicians but difficulty arises in designating what repairs can be safely delegated to technicians. It is stated that any attempt to delegate such service would be premature at least until technicians possess "some means of accreditation for fully qualified dental technicians".

The report recommends "that if a bill of limited scope could be agreed upon some of the existing situation could be rectified and a way opened for further steps to be taken . . . ". A rough draft for such a bill "that with modification might find acceptance" is presented in the report. This bill recommends:

(1) That a Board of Dental Technicians be established.

(2) That the Dental Laboratory Association and the Dental Technicians' Society each present a slate of six of their members for appointment (these to have 5 years' experience and at no time having been convicted of illegal practice).

(3) That the Chairman be appointed by the Lieutenant-Governor.

(4) That this Board have power to negotiate establishment of training courses with the University of British Columbia, elect an examining committee, issue diploma of competence, restrict training or certification to

this one programme and generally regulate its own proceedings.

In respect to economics—"it is difficult to propose how the status of the dental technician craft can be much improved particularly regarding the economic aspect, until such a time as the two groups of dental technicians agree on some steps that are common to the interest of both. The basic responsibility for promoting better conditions within the craft rests largely upon those who are engaged in it."

Comments by College of Dental Surgeons of British Columbia on Dean Chant's Report.

(1) Dean Chant makes it very clear in his report that only those with the proper professional educational background are qualified and shall be allowed to work directly for the public in the field of prosthetic dentistry.

(2) Dean Chant suggests that the two bodies of technicians, the ethical and unethical, should unite to form a single corporate body. The College see little hope of a union between these "incompatible" bodies.

(3) That some system of standardized training and certification should be established for dental technicians — the College expresses the opinion that this is the long range basic solution to the problem.

(4) That certain committees be set up and eventually a controlling board and examining committee—the College strongly suggests that the dental profession be represented on any such boards or committees.

(5) That by some means the economic status of technicians in general be raised—In the opinion of the College the answer lies in the establishment of satisfactory methods of training.

St. Louis Dental Society Centennial

Dr. K. M. Johnson, President of the Canadian Dental Association, attended the centennial celebration of the St. Louis Dental Society held in St. Louis November 25-28, representing the Association. He appeared among an impressive list of prominent speakers at the meeting. The St. Louis Dental Society has completed one hundred years of continuous activity which is being celebrated by their Mid-Continent Dental Congress.

Dr. Warren J. Riley Appointed

Dr. Warren J. Riley is representative to the C.D.A. Board of Governors for Manitoba. Dr. Riley succeeds Dr. K. M. Johnson, now serving as President of the Association. He has served as a member of the Manitoba Dental Board for several years and is President of the Western Canada Dental Society at the present time. Having served as President of the Manitoba Dental Association, Winnipeg Dental Society and in numerous other official positions Dr. Riley brings valuable experience to the Board.

Nation-Wide Survey of Dentistry in United States

A nation-wide survey of dentistry is expected to be initiated in the U.S. early in 1957. The estimated cost of the survey is approximately $500,000.00. Grants in support have already been made by the W. K. Kellogg Foundation, Rockefeller Brothers Foundation and the Louis W. & Maude Hill Foundation. The Board of Trustees, American Dental Association at its mid-year meeting held recently, voted a total of $120,000 in support of this project. The survey is to be conducted under the direction of the American Education Association with Dr. Virgil W. Hancher, president of the State University of Iowa as Chairman of the survey committee. This proposed survey is undoubtedly the broadest study of dentistry ever undertaken and will cover all aspects of dentistry. It is proposed that a commission of eleven members be appointed to evaluate the data and recommendations provided by a competent technical staff.

The eleven members of the commission will be constituted with personnel along the following lines: The Public, Education, Dentistry, Labour, Management, Medicine, Public Health, Public Relations and Research.

Taxation Statistics for the Year 1954

The annual publication of the Department of National Revenue entited "Taxation Statistics" has now been issued. The

statistical data presented is for the year 1954. Some 4,120 Canadian dentists paid income tax for that year. The average net income of those dentists is reported to be $7,896. The average tax paid by dentists reporting income is $1,225. The total tax paid by dentists represents 0.47% of the grand total of income tax paid for the year 1954. Four occupations are reported with higher average income than members of the dental profession, namely: Consulting Engineers and Architects ($12,059); Lawyers and Notaries ($11,925); Medical Doctors and Surgeons ($11,891) and Accountants ($8,672). Under "Income Distribution by Occupational Classes" it is reported that of the number of dentists paying income tax for 1954, some 310 (or 7.5%) reported incomes over $15,000; 810 (or 19.7%) reported income between $10,000 and $15,000 thus making 27.2% of dentists with an income over $10,000 and 72.8% under this amount.

National Health Services—Policy Statement by Canadian Chamber of Commerce

At the 27th Annual Meeting of the Canadian Chamber of Commerce held at Quebec City during 1956 the following policy statement was adopted:

"The attainment of the highest possible standards of health is desirable. A healthy people constitutes one of the most valuable resources of the nation. The problem of national health involves consideration of (1) prevention (2) cure and rehabilitation and (3) care of the chronically ill and incurable.

Most important is the prevention of disease and of accidents. This phase of the problem must be dealt with through an accelerated program of public education in health matters and in safety measures.

Adequate medical services and facilities must continue to be developed throughout Canada, and an increasing number of medical personnel trained, so that the Canadian people may be assured of proper medical care (which includes hospital care) when needed.

The national health does not depend upon health services alone, but also upon proper food and shelter. The existing social welfare program contributes in this latter respect, and in considering government outlays for health services, due regard must be had for the annual commitments which include Old Age Assistance, Old Age Security, and Family Allowances, all of which involve very substantial recurring costs paid for by the Canadian people.

The Chamber believes that in a free society the individual has the primary responsibility to make provision for and pay the cost of medical care for himself and his family. The Chamber also believes that Canadians should set a high priority in budgeting for adequate personal and family coverage for medical expenses. The Chamber endorses the action of many employers in assisting their employees in meeting the cost of medical care. The Chamber is impressed with the rapid extension and growth of voluntary service and indemnity plans for prepaid medical care. These voluntary plans should be encouraged with aid from employers when appropriate. The Chamber recognizes, however, that despite the increase in coverage under voluntary plans there will still be circumstances under which some Canadians will be subject to catastrophic medical costs. In such cases, the possibility of further Government assistance, should be explored.

It is recognized that government aid is necessary in the provision of adequate health facilities throughout Canada. The Chamber endorses the program of health service grants by Federal and Provincial Governments and believes that these grants should be as liberal as possible, bearing in mind that government revenues come from the people and that existing annual commitments for social welfare benefits already are substantial and are increasing. The Chamber believes that the contributions made by Governments to assist private organizations in caring for the indigent sick should be increased to a more realistic proportion of actual cost.

The Chamber is opposed to any form of compulsory health insurance or state medicine. So-called "free" health services would result in vastly increased demands upon them. It seems generally to be recognized that it is impossible to forcast with any accuracy the probable cost of a compulsory and comprehensive national health program, but it is inevitable that its cost would substantially exceed the amount spent today on health in Canada.

The Chamber does not favour the proposal of the Federal Government to share with the Provinces the cost of a standard ward level hospital insurance plan. Such a plan would lead inevitably to compulsory health

insurance of a comprehensive nature and to state medicine.

The Chamber believes that any financial assistance provided by the Federal Government should be directed to the areas in which the individual is generally unable to help himself, to the indigent, the aged, the chronically ill and to those who suffer catastrophic medical expenses.

Gift by Lord Nuffield for Dental Research

At a luncheon, during October, Lord Nuffield presented Professor Wilkinson, Dean of the Dental Faculty, Royal College of Surgeons of England, a cheque for £100,000 for the establishment of a chair of dental research in the college. The Dean in a speech of thanks said that a milestone had been laid that day in the history of dentistry and of the College. The money he said, would be used to provide a Chair of Dental Research, and the professor holding it would act as head of the Department of Dental Science, recently established as the result of generous help already received from a number of industrial organizations.

Dr. J. B. Macdonald Appointment Announced

Dr. John B. Macdonald has been named Director of the Forsyth Dental Infirmary for Children and Professor of Oral Microbiology in the Harvard School of Dental Medicine. The selection of Dr. Macdonald was announced by Harvard Uniersity and the Trustees of the Forsyth Infirmary on December 2 last. This is the first joint appointment made by the two institutions since their affiliation in May 1955.

Prior to his appointment, Dr. Macdonald was Chairman of the Division of Dental Research and Professor of Bacteriology in the Faculty of Dentistry, University of Toronto. Until recently he served as a member and later as Chairman of the Canadian National Research Council's Committee on Dentistry. His research has dealt primarily with infections of the mucous membranes of the mouth and their relation to disease affecting the adjacent tissues. In the spring of 1956 the University of British Columbia published a report by Dr. Macdonald containing recommendations for the establishment of a dental school.

Born in Toronto Dr. Macdonald received the D.D.S. degree from the University of Toronto in 1942, the Master of Science in Bacteriology from University of Illinois in 1948 and the Ph. D. in Bacteriology from Columbia University in 1953.

Dr. Macdonald succeeds Dr. Howard M. Marjerison, who died in September 1955, as Director of the Forsyth Dental Infirmary.

Reduced Fares for Annual Meeting

The Canadian Passenger Association has granted reduced fares on the Identification Certificate Plan for the Annual meeting to be held at Winnipeg June 19 to 26, 1957.

The authorized dates for the start of the going journey will be as follows:

From stations on Western Lines — all points Port Arthur, Armstrong, Ont., and West — June 15th to 24th inclusive, 1957.

From stations on Eastern Lines—all points east of Port Arthur and Armstrong, Ont., not including Newfoundland — June 13th to 22nd, inclusive, 1957.

From Newfoundland — June 11th to 20th inclusive, 1957.

Identification certificates may be obtained by writing the Secretary, 234 St. George Street, Toronto, Ontario.

Noted in Newspapers

A new $2,000,000 school for deaf pupils has been opened in Edmonton in which provision is made for a dental office.

The Bureau of Statistics reported during the third week of November that the cost of health care (hospital charges, doctors' and dentists' fees) was up 4.5 points from a year ago.

Fluoridation was beaten by a small majority of 102 votes in a referendum at North Battleford on October 31 last.

COMMITTEES AND COUNCILS

Hospital Dental Services

Members of this committee are acutely aware of the difficulties under which hospital dentists are operating at the present time. The situation has not improved since the last C.D.A. meeting. More hospitals have been directed to abide by the provincial hospital acts. However, most hospitals in spite of such directives are being very co-operative with their dental staffs in the hope that the provincial acts will soon be amended.

The committee is keeping it's finger on the pulse of activities and employing every means to see that the amendments are in the best interests of the profession and the public.

The committee is proceeding with a redrafting of the "Basic Standards For Dental Services In Hospitals". In the past there has been some difficulty in establishing a "yard stick" for assessment purposes in the approval of hospital dental services. It is hoped that the new "standards" will facilitate the approval of dental services in all types of hospitals. The committee is of the opinion that it's progress is limited until the hospital acts permit dentistry to assume its professional status as a national health service.

The committee was directed by the Board of Governors to investigate civil defense in relation to dentistry and to recommend what part the C.D.A. should play in national civil defence. This problem is still under review, but it appears that the C.D.A. can only encourage and advise the provincial bodies to take the necessary steps to direct their local associations in this matter. The local bodies should make a survey of conditions and organize dental personnel for any possible emergency. This would entail the formation of a roster of dentists with their qualifications, who would be available in case of emergency.

Local conditions vary greatly from province to province in hospital dental services and civil defence, so that it is the sincere wish of this committee that members of the profession write and advise us in respect to conditions as they exist throughout the country.

D. M. Tanner,
Chairman.

Public Relations

The matter of Public Relations for the Dental Profession assumes greater importance month by month.

The increasing demand for dental services could be fraught with the danger of limiting the services we offer, in an attempt to keep pace with demand.

The increasing cost of living makes it difficult for medium and low income groups to operate a balanced budget. As we well know, in many families dentistry is the last thing to be considered. Competition with instalment buying of home appliances and motor cars, puts health services a poor last in their financial arrangements.

It is the opinion of the Public Relations Committee that education of the public in the importance of preventive dentistry, including regular examinations and treatment where necessary, is the only answer. If neglect leads to an emergency that precludes anything but a major financial disbursement, we are likely to be considered "Shylocks" when we insist upon payment. When in comparison, appliances, T.V., etc. may be purchased with little or nothing down and the balance spread over many months.

It we teach the public that it can be possible to avoid major dental expenditures and at the same time maintain comfortable, good-looking and healthy teeth, most people will see the logic of it.

At the recent Winter Clinic of the Academy of Dentistry, Toronto, Dr. Otto W. Brandhorst, speaking at the luncheon meeting, stressed the danger of what he described as "dollar dentistry". We must forever be alert that the public do not get the idea that dentistry is a commodity. The public should expect to pay a reasonable fee for dental services. We in turn should provide a complete service with emphasis on education in prevention particularly for children.

The Public Relations Committee have available for distribution to any dentist or group of dentists in Canada, pamphlets on many phases of preventive dentistry. In addition a series of six 5 minute talks on tape recordings for radio broadcast is available. A new 15 minute tape recording on fluoridation will be ready shortly. Movie films are also available that have great appeal to school children.

All educational material is distributed from the Canadian Dental Association Headquarters, 234 St. George Street, Toronto. You are earnestly requested to make use of these.

Harold R. Skilling,
Chairman.

THE CORPS

No. 54 Dental Unit C.A. (M) gained top marks in general efficiency competition and thereby was awarded the Moore Trophy. Lt. Col. C. E. Woods is commanding officer.

An R.C.D.C. detachment of two officers, two technicians and two assistants has proceeded to Egypt for service with the United Nations Emergency Force. Major P. S. Sills, a 1950 graduate of the University of Toronto and Captain D. E. Williams, a 1955 Dalhousie University graduate are the dental officers chosen to represent the Corps.

Colonel C. B. Climo of the Directorate, Major A. T. Roger of the R.C.D.C. School and Major A. J. Gervais of No. 53 Dental Unit (Militia), Montreal, recently attended a one-week course for Medical and Dental Practitioners at the Canadian Civil Defence College, Arnprior, Ont. Colonel Climo also attended a civil defence course for dental officers at the United States Naval Dental School, Bethesda, Maryland.

Captain J. H. Duggan was recently posted to Europe for service with the Royal Canadian Air Force in France.

Captain T. D. Cobb has proceeded to Europe for service with the Army Brigade in Germany. He was accompanied by Mrs. Cobb and their two children. Captain Cobb is to replace Major D. J. Carmichael who is returning to Canada after a two-year tour of duty. Major and Mrs. Carmichael and their son will live in Halifax.

Lt. Col. N. L. Simon, CD, Commanding Officer of 56 Dental Unit RCDC(M) held a Mess Dinner and Training Conference at the Officers Mess, 15 Militia Group Headquarters, Toronto on Sept. 26, 1956. Guest speakers at the Conference included Brig. W. S. Rutherford, ED, Commander, 15 Militia Group and Col. L. V. Janes, OBE, recently appointed Honorary Colonel of 56 Dental Unit. Officers attending the Conference were from Toronto, Hamilton, St. Catharines and Port Colborne, and plans were discussed for training year of 1956-57.

ECONOMIC SECURITY

Your Home

By E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist.

PART 4

SOME MORE QUESTIONS AND ANSWERS

This month we shall continue to consider some of the questions arising in connection with the purchase of a house to make a home:

Q: If I buy ready-built, how can I protect myself?

A: If the property contemplated has been built for a number of years, a professional appraiser, not associated in any way with the seller or the selling agency, should be employed. He should, if at all possible, be provided with a set of the original construction blueprints.

Such an individual can determine the present condition of the house, any latent defects in construction; any developments which suggest an early incidence of heavy repairs; inadequate or dangerous wiring; the likelihood of defective plumbing or heating systems; extent and efficacy of insulation.

He will also be in a position to advise on present fair market value of the property, and provide you with an estimate of the probable trend of future values, both of the individual property and the district as a whole.

If the property is new-built, you should engage a professional engineer to examine the construction details. (It is desirable to have an engineer for newly-built properties because many of the construction signs for which an appraiser looks in an older building have not had time to develop). An appraiser should be consulted, however, in regard to present and future values. His fee, or that of an engineer is well-spent, and could save much greater expenditure at a later date.

The warrants on the heating plant and all other installed equipment should be obtained, and contact should be made with the person or company who is supposed to make good any defects during the period of the guarantee.

In all circumstances, the zoning regulations existing and any projected changes should be obtained from the municipal authorities. Title should be searched and guaranteed by your solicitor or other authority as provided by provincial statute.

Finally, even if all the above matters are settled to your satisfaction, be certain that the house suits your taste and that of your family, that it has adequate amenities (plumbing, electric outlets, kitchen design and organization, number of rooms for now and future, etc., for you and yours to "feel at home.") No price is low enough, no construction good enough, if the family fails to find peace and contentment.

Q: "If I build, how can I protect myself?"

A: Building your own home, of course, offers greater opportunities and rewards, but also entails their concomitants, greater planning and responsibility. First, the lot size must be adequate, and the house positioned so that light and air will be *permanently* assured; and livability and value not prejudiced by possible future adjacent encroachment.

It is important that all questions of title concerning the lot, including a survey by a professional surveyor, and determination of all zoning and building restrictions be made before any start whatsoever toward building is made. If the site is in a rural area without municipal

water and sewage, the arrangements for these also must be determined before building is commenced.

The planning of the home is the greatest advantage to be gained from building the house yourself. The maximum can be had from this opportunity by employing a professional architect, and of course, one who has done considerable work on residences is preferable. He can do much to increase the convenience and livability of the home, both immediate and future, as well as to maintain value. All services which must go inside the walls should be anticipated to the greatest possible extent before construction in order to avoid costly and often unsatisfactory reopening at a future date. Sufficient electrical outlets, plumbing for a second future bath or powder room, heating or air conditioning for a possible addition to the home, are among the items to be considered and provided in the original plans.

Similarly, the quality of all materials to be enclosed should be of the best, as well as the workmanship, if costly and difficult repairs are to be avoided. If economies are necessary, it is much more desirable in the long run that these be in the accessible finishing stages—for example, hardwood floors throughout can be deferred without the loss entailed by undoing and redoing a basic structural item such as running new plumbing lines or even additional wiring.

Extremes of architectural style should be avoided as inimical to future value when ideas in this regard have changed.

When actual construction has started, it is desirable that the architect or a professional engineer inspect and certify to the quality of workmanship and materials at two or three stages throughout the construction. The importance of this inspection starting with the foundation cannot be overstated. Provision for such inspection must be made in the contract with the builder, and his payments should be conditioned upon completion to specication at each stage.

If you do not employ an architect and follow a design in general use which the builder may suggest, it is essential that you employ as your inspector a professional engineer having no connection with the builder; and that the engineer's fees be paid by you direct, not through the builder.

Final payment to the builder should be made only after you have received the certificate of the architect or engineer that all deficiencies have been made good, that all materials used have been up to specified standards, that the workmanship is sound, and that the house has passed final inspection.

The concluding article of the present series will deal with some of the broader implications and national advantages in widespread home ownership.

C.D.A. - W.C.D.S. CONVENTION NOTES

Plan on coming to Winnipeg — the geographical centre of Canada — for the Convention June 23 to 26, 1957. A well rounded program has been arranged that includes a special Social Event that will be a "first" at a National Convention. More news about this surprising and delightful undertaking will be presented in the next issue of the Journal.

A fine list of clinicians has been arranged that include the following excellent men in their respective fields.

1. **DR. SAMUEL CHARLES MILLER**, Professor and head of Department of Periodontia, N.Y. University.

   Subject Periodontia and Oral medicine, has published several texts on these subjects.

2. **DR. VINCENT TRAPOZZANO**, St. Petersburg, Fla.
   Subject — Full Denture Prosthesis, taught P.G. course in Eastern States. Editor of text for State Board Exams.

3. **DR. RALPH W. PHILLIPS**, Associate Professor and Chairman of Dept. of Dental Materials, Indiana University, School of Dentistry. Has published 60 scientific papers on such topics as Amalgams, Cements, Resins, Impression materials, etc.

THE PROVINCES

Alberta

Edmonton and District Dental Society

The regular meeting on Tuesday, November 6, 1956, consisted mainly of an afternoon and evening clinic by Dr. Bernard Jankelson, Seattle, Washington. Using cinefluorography, Dr. Jankelson illustrated the following points about the Physiology of Mastication.

1) Incision: Teeth hold the food while muscles of the head and neck and the hand combine to break off pieces.

2) Mastication: In the actual chewing of food teeth contact very little.

3) Deglutition: It is in swallowing that the teeth come firmly together giving stability to the mandible while powerful muscles give a piston like thrust to the tongue. An average person swallows about once every minute for the purpose of ventilating the middle ear and removing accumulated saliva.

At this time the teeth come together in centric occlusion in order to brace the mandible. If centric occlusion and centric relation of mandible to the maxilla are in harmony all is well, but if not, powerful muscle forces are injuring the teeth themselves, their supporting structures or the temporomandibular joint. In centric relation the heads of the condyles are in the most retruded position in the glenoid fossae. This position gives the mandible bracing and it is a stable, repetitive position to which the mandible normally returns.

Dr. Jankleson then discussed four phenomena which govern human occlusion:

1) Odontoeuresis: Because of bulging shape if the occlusal surface of a tooth wears the surface widens.

2) Odontostenosis: Since the predominant stroke in chewing is vertical abrasive food tends to wear the teeth to a narrow form.

3) Mandibular advance: With loss of vertical height the mandible tends to close more forward.

4) Continuous eruption: This phenomenon offsets loss of vertical height and prevents mandibular advance. Gottlieb taught that deposition of cementum leads to continuous eruption but modern studies indicate that the whole alveolar process is involved.

Discussion preceeded to the etiology of traumatic occlusion and its correction by judicious grinding of the teeth. By means of slides he showed how Kerr's occlusal indicator could be used to detect facets on teeth and described how to grind them. Facets on teeth which restrain them from coming together to full closure, cause people either to clamp hard or brux. Bruxism can be corrected by proper shaping of the teeth and removal of occlusal interferences.

The Edmonton and District Dental Society

On Wednesday, November 28, the President and some members of the Edmonton and District Dental Society travelled to Red Deer and were visitors at a meeting of the Central Alberta Dental Society. Dr. C. Castaldi of the University of Alberta gave a talk on "The Use of the Rubber Dam in Children's Dentistry". He also discussed the results of some research he had done on the use of matrix holders and other means of contouring amalgam fillings. His conclusion was that the use of the wedge was more important than the type of matrix holder employed.

Red Deer was enthusiastic about the support given their meeting by the visitors and many of these became associate members of the Central Alberta Society.

The December meeting of the Edmonton and District Dental Society was addressed by Dr. L. O. Bradley, administrator of the Winnipeg General Hospital, on the topic "The Dentist's Relation to the Hospital". He described his experience in how smoothly dentistry could be integrated into the routine in the general hospital. He noted that while in the past tonsillectomies and deliveries were commonly done outside of the hospital, they were now universally done in the hospital. The long term trend in dentistry was a similar movement but it was just beginning.

The public is demanding more dental service in hospitals and with physicians, dentists and administrative staff working together the problems that arise can easily be solved. The increased demand on hospital beds can be met by both physician and dentist convincing patients that hospital beds must be kept for acute illnesses and important surgery, including dental surgery. Conflict in the operating room can be met by scheduling dental operations after dinner; possibly also seasonal scheduling would make the best use of the hospital. The noon luncheon can be utilized to familiarize den-

tists with the details of admission, ward rounds, nurses' rules, dscharges, rates, etc. so that the dentist feels more secure and the hospital routine runs smoothly. The dentist must always be ready to help the surgeon in emergency and call in the physician when the patient's condition goes beyond his field. The public as a whole would appreciate the increased service it would be getting.

Dr. Bradley felt that dentists working with the hospitals to give extended service to the public would be of benefit to hospitals. They are more and more used by the community and taking more of the community dollar. Thus they need good public relations.

Special guests at the meeting were Provincial health officials and representatives of city hospitals.

G. C.

The Late Dr. Howard Whittaker Honoured

The son of a dentist who practised in Alberta for 50 years was presented with a plaque recently, marking his father's years of service to the profession in the province.

Mr. Bruce Whittaker, a city lawyer, received the plaque at a banquet in the Seven Seas of the Edmonton and District Dental Society. The presentation was made by Dr. R. A. Rooney, general secretary-treasurer of the Alberta Dental Association.

Dr. Howard Whittaker served as a dentist in Alberta, mostly in Edmonton, from 1906 until this year, shortly before his death.

Calgary and District Dental Society

The opening meeting of the 1956-57 season took place on Oct. 1st, 1956 and was attended by 66 members and guests.

At this meeting Dr. Wilf Blair was thanked for the use of his home where a farewell reception was held in honor of Dr. and Mrs. Ross Upton. Dr. Upton is now Executive Secretary of the British Columbia Dental Association and is residing in Vancouver.

Dr. L. K. Brooks presented a report on the Preventive Dentistry Committee, in which he indicated progress is steadily being made regarding fluoridation.

Dr. Henry Freeland reported to the meeting on the Mediation Committee which was appointed by the Alberta Dental Association to mediate disputes between dentists and patients. He reported a high degree of success in the work of his committee and pointed out that many disputes, usually of financial origin, have been prevented from reaching legal action. All cases handled so far have been amicably settled to the satisfaction of both dentists and patients.

The speaker for the evening was E. W. Paul Luxford, D.D.S., M.Sc., now practising Oral Surgery in Calgary. Dr. Luxford gave an excellent illustrated lecture on Fractures of the Facial Bones, outlining methods of diagnosis and treatment. The cases presented pointed out the advantages of internal fixation by wiring fragments to the abutments of the head bones, over external fixation.

Curling is now underway and members meet on the last Friday of each month to participate in this fine sport.

Several new committees have been formed this year and an Oral Surgery Study Club meets once a month in the General Hospital.

The Calgary and District Dental Society met November 5, 1956 in the Palliser Hotel at an afternoon and evening meeting. The speaker was Bernard Jankelson, D.M.D., of Seattle, Washington.

He presented an excellent address in two sessions on "Occlusion and What To Do About It" which was very well received by the members and guests. He spoke on what may well be a revolutionary concept in the treatment of traumatic occlusion and bruxism. His presentation included a fine cinefluorographic motion picture study of the function of mastication in general. His theory was clearly outlined and following this, practical methods of its application were presented. He included the application of his work to prosthodontics, stressing throughout his talk, the necessity of stable centric occlusion.

The Calgary Society invited guests from the Central Alberta Dental Society, the Lethbridge and District Dental Society and several other points in Alberta.

W. A. N.

Central Alberta Dental Society

The first meeting of the Central Alberta Dental Society was held recently in Lacombe, with civilian and military members of the profession.

Dr. Don Culham, president, welcomed Col. G. B. Shillington and Major R. E. Dyer, both of Edmonton, and Capt. H. E. McKenna, R.C.A.F. Station, Penhold.

Col. Shillington, command dental officer, Western Army Command, Edmonton, was introduced by Dr. D. C. Deedrick of Lacombe. The officer spoke on the treatment planning for partial dentures, a field of dentistry often neglected.

The speaker stressed the fact that dentists must do their own planning and designing to obtain best results. He discussed design under three headings, retention,

support and bracing. His talk was illustrated with slides and models.

Dr. Lorne Otway of Red Deer thanked Col. Shillington and urged that the officer address the society again at some future date.

A short business meeting followed and the question of associate membership for members of the Edmonton and Calgary dental societies was discussed and approved.

Faculty of Dentistry

On November 2 a stag dinner and meeting of the staff of the Faculty of Dentistry, University of Alberta, was held in the "Cathayan". Besides present staff members, Drs. Bulyea and Rooney were invited.

After the dinner, we were privileged to hear Dr. James W. Pearce as guest speaker. Dr. Pearce heads the Physiology Department of the Faculty of Medicine, University of Alberta. Dr. Pearce obtained his degree in medicine at Queen's University and his Ph.D. in physiology at Oxford University. His subject was the "Basis of Mind". His talk was very informative and interesting. Man's thought and actions, though often questionable, are understandable in the light of recent scientific knowledge was the gist of his talk. Dr. Pearce has the ability of discussing a scientific and heavy subject in a light and humorous manner, yet able to present basic facts. His talk was very much appreciated by all present.

R. C. S.

British Columbia

Vancouver and District Dental Society

Both afternoon and evening the Panorama Room of the Hotel Vancouver was crowded on November 6 when the Vancouver and District Dental Society listened to Dr. Gordon M. Fitzgerald of the University of California speak on the subject "Oral Roentgenology".

The lectures covered recent radiographic techniques, radiographic interpretation and radiation. The speaker stated that recently in the U.S. there has been considerable unwarranted publicity about radiation caused to patients by physicians and dentists. It has been found that the long-cone method of making dental X-ray exposures not only produces better pictures, but also results in much less radiation to the patient.

Dr. Fitzgerald showed many of the effects upon dentists and their assistants from radiation, which is "necrobiotic, cumulative and irreversible." Various precautions were outlined to reduce to a minimum the exposure of the dentist himself to X-rays.

An accomplished speaker and teacher, with a delightful sense of humor, Dr. Fitzgerald was introduced by Dr. Matt Waterman and thanked by Dr. Harold Cline.

At the business session, presided over by Dr. Wes Munsie, it was decided to establish a 24-hour emergency service for patients unable to obtain the services of their own dentist. This would be done by employing the "answering service" used by many dentists while on holiday. A listing in the telephone directory under Emergency Dental Treatment would bring the calls to volunteer dentists.

Out of a paid-up membership of 287, the Study Club convener reported that 147 men were enrolled in eleven study clubs. Proportionately, the Society has more members engaged in study club work than any other dental society in the world.

Kootenay Dental Society

The fall meeting of the Kootenay Dental Society was held in the Civic Centre Building, Nelson. The first speaker was Mr. G. Bourne of the Royal Trust Company, Vancouver, who gave a very interesting and enlightening talk on "Wills, Estates and Succession Duties". A question period followed which revealed that the dentists were eager to obtain information.

Through the kindness of the President of the Spokane Dental Society, Dr. Knetchel was obtained as a clinician on hypnosis. There was little doubt that after listening to wills and estates (a sombre thought), he brought forth the lighter side of dentistry. He had a grand sense of humor, and proved to be an excellent speaker. Afterwards a representative of James Richardson and Son, Mr. Westcott of Lethbridge, spoke on "Investments".

A short business meeting followed with Dr. William Fraser, President, in the chair, and Dr. Walhovd as Secretary. Light refreshments were served during the afternoon. The annual meeting for the election of officers will take place at Creston in March, at which time Dr. Gullett and the President of the C.D.A. will be present.

Interior Dental Society

The Interior Dental Society held their fall convention in Kamloops on October 27. Dr. G. J. Cameron proved to be a splendid chairman and Dr. Lloyd English an efficient secretary. Twenty-five dentists attended.

Dr. H. McLean of the University of Alberta Dental School was the clinician, and his subject was "Radiology and Diagnosis". The long cone technique was emphasized and much stress was placed upon the need of greater care to avoid exposure to radiation of dentist, nurse and patient.

Dr. Ben Bishop was elected next president and he was to select his own secretary.

Next year Vernon will be the host city.

Dr. Fred Parmley of Penticton, representative of the College, gave a report of activities and Dr. Leon Coursier reported upon activities of the B. C. Dental Association.

Miss McDonald from Victoria attended as representative of the Dental Nurses' Association. She was of great assistance in organizing the local nurses, who were present at the lectures.

Victoria and District Dental Society

On November 19 the Victoria and District Dental Society, with an attendance of 33, greeted Drs. J. S. Craib and J. A. Michaelson of Vancouver, whose excellent talk on "Stainless Steel Crowns" was illustrated with coloured slides. Dr. Craib covered the fabrication and placing of the crowns, closing with a table clinic. Dr. Michaelson for his part outlined a technique for devital pulpotomy. The whole presentaton was concise, practical and extremely helpful.

Before proceeding to the business of the meeting, the President, Dr. C. B. Jameson, made mention of the honours recently bestowed upon two members: Dr. Harry Johns has been made a Fellow of the International College of Dentists, and Dr. Cal Foote a Fellow of the American College of Dentists. Congratulations were extended by the Society.

Fraser Valley Dental Society

The November meeting of the Fraser Valley Dental Society was held at the Dell Hotel in Whalley. Drs. C. Hallman, M. Mickelson and Wm. Joiner of the Vancouver Prosthetic Club presented a very informative clinic on "Helpful Hints in Prosthetic Dentistry".

D. H. M.

Manitoba

Winnipeg Dental Society

The first Business and Clinical meeting of the Winnipeg Dental Society for the 1956-57 season was held on Wednesday, October 17, 1956, at the Royal Alexandra Hotel in Winnipeg.

The President, Dr. Gordon Campbell, opened the meeting with a short welcome address to resume the 1956-57 season. In his preamble to the morning clinical session he introduced the lone new Society member, Dr. Russell Grenkow, to the Society members. The meeting was then turned over to the Clinic Chairman, Dr. M. J. Averback, who introduced the speaker of the day, Dr. E. E. MacGibbon.

Dr. MacGibbon took his D.D.S. in 1913 at the University of Minnesota. He then completed Post Graduate studies in Oral Surgery at North Western University. Subsequently to military service with a plastic surgery hospital in World War 1, he was Associate Professor of Oral Surgery at the University of Minnesota Dental School until his resignation in 1951. Dr. MacGibbon is Past President of several Dental Organizations and has given numerous lectures and clinics to local and state dental Societies.

His subject for the day was "Exodontia for the General Practitioner".

The noon period was occupied with a Luncheon and Society Business Meeting. General business of the Society was conducted by the President, Dr. Gordon Campbell. A highlight from the floor was a fine appeal in behalf of the Community Chest of Greater Winnipeg by Dr. Keith Routley.

The afternoon was occupied by a further clinical session by Dr. MacGibbon.

Jottings of the morning and afternoon lectures indicate that Dr. MacGibbon feels that:

1. Mandibular block anaesthesia should not be given "so high nor so far."
2. Anaesthesia must be profound.
3. Local anaesthesia is preferable in most cases.
4. Pre-operative sedation is a valuable adjunct to surgery.
5. Antibiotics are better given by the patient's physician, who knows allergies and dosages better.
6. The use of straight elevators is a must to push back the soft tissue attachment and in starting tooth movement.
7. The field of operation must be thoroughly cleaned and trimmed of all spicules and projections and loose bony septa to promote rapid healing.
8. Forceps should always be pushed up high—past or up to the largest diameter of the root, removing the gingival third of the buccal and lingual plates if necessary. This eliminates many root fractures and flap-operations.

At the close of his lecture, Dr. MacGibbon was moved a vote of thanks by Dr. Palmer Wood, on behalf of the Winnipeg Dental Society. Dr. Wood assured Dr. MacGibbon that his talk was thoroughly enjoyed for its fine information and honesty of approach.

Western Manitoba Dental Association

The Annual Meeting of the Western Manitoba Dental Association was held at Clear Lake on the week-end of September 7th. Drs. Del Dawson of Neepawa and Ed. Cole

of Boissevain were in charge of the arrangements.

Those attending the meeting included the following: BRANDON — Drs. Bill Jones, Jack Purdie, John Mills, Archie Graham. DAUPHIN—C. S. "Scottie" Robertson, Al McKee, Vern Watson. NEEPAWA — Del Dawson, Jack Pierce. MINNEDOSA—G. S. "Buck" McLean. RUSSELL— Cam Graham. SWAN RIVER—L. Mathews. PORTAGE LA PRAIRIE—Fred Parrott, H. H. "Smitty" Smith. BOISSEVAIN—Ed Cole. MORDEN —Fred Olinik. Guests from Winnipeg were Drs. Ben Toombs, Keith Routley, Pat Riley, Jack Grahame, and Messrs. Paul Gouin, Fred Dodds, Harry Charters and Ken Caldwell. Also present were Al Bird and Len McDougall of the Dauphin and Brandon Laboratories.

Friday evening was spent renewing acquaintances and discussing the more serious aspects of Dentistry. Two excellent Table Clinics, "Dealers Choice," and "Straight Stud" kept the members and guests fully occupied until daylight Saturday — GOLF DAY.

After keen competition, the Tournament prize winners were as follows:

Ash Temple Trophy—Scottie Robertson.
Shaw Laboratory Prize—John Mills.
Denco Prize—L. Mathews.

Principal speakers after a banquet of delicious to-order steaks were Del Dawson, who discussed the arrangements for the next meeting, and Pat Riley, who brought greetings from Winnipeg.

The Table Clinics were resumed Saturday evening, and more golf was enjoyed on Sunday.

Bursaries for Dental Students

The Manitoba Provincial Government, after considerable agitation by The Manitoba Dental Association, finally realized that there was a serious shortage of new dentists coming into Manitoba. In an effort to help overcome this, the Government set up a plan for assisting students in attending Dental College, and these students on graduation would be obliged to practise in Manitoba for a period of time.

This plan came into effect at the beginning of the 1954-55 academic year, and at the present time there is a total of twenty-one students who are being subsidized. The average bursary granted this year has been $905. Eight of the students are attending the University of Alberta; ten, the University of Toronto; two at McGill University, and one at Marquette University. Seven of these are in first year, six in second year, seven in third year and one in the final year, so that in the near future this program should start to pay-off for Manitobans.

J.P.B.

New Brunswick

New Brunswick Dental Society

The Annual Meeting of the New Brunswick Dental Society was held in Fredericton on the 3 & 4 of November 1956. There were forty present at the meeting which, expressed as a percentage of the active members in the province, was a very good representation. Among the guests were Dr. K. M. Johnson, of Winnipeg, president, and Dr. Don Gullett secretary of the C.D.A. At a luncheon party at noon both these gentlemen gave very comprehensive, interesting and informative talks on the national organization. A warm invitation was made to attend the annual C.D.A. meeting next June in Winnipeg.

The 1957 Maritime Dental Convention is to be held in Moncton, New Brunswick. No definite date was set for this meeting.

Three new members who had started practice in the province were welcomed. Suitable observance was made for the two members who had passed away during the year.

The usual yearly reports from the executive and various committees were made and necessary action taken when indicated. A strong resolution on the fluoridation of water was drawn up to be presented to the Minister of Health of New Brunswick. At present with the health act interpretation as given by the Supreme Court of New Brunswick, minerals may only be added to the water supply to purify the water. It is expected that action on this will be taken at the next session of the N.B. legislature.

A grant of $25.00 was given as a prize to the Faculty of Dentistry of Dalhousie University. A special grant of $100.00 was given to the Spring Hill Miner's Disaster Relief Fund.

The following slate of officers was elected: President, Dr. D. A. Somerville, Bristol; Vice Pres., Dr. S. K. Wetmore, Lancaster; Sec.-Treas.-Registrar, Dr. S. K. Wetmore, Lancaster; Past Pres., Dr. E. J. Leger, Bathurst.

Council — Area Representatives: Dr. Jos. Levesque, Dalhousie; R. B. DeWare, Moncton; G. L. Ramsay, Saint John; R. H. Dolan, Fredericton; J. A. Chouinard, Edmundston.

Council Members—Additional: Drs. Paul E. Cormier, Moncton; Monica Mooney, Saint John; C. A. Hayward, Chatham; W. A. Sinclair, St. Stephen; H. F. Bonnell, Saint John.

C.D.A. Representative: Dr. H. B. Fleming, Moncton; W. B. O'Brien (Alternate), Fredericton.

N.D.E.B. Representative: Dr. Geo. A. Cormier, Moncton; J. B. O'Brien (Alternate), Saint John.

Newfoundland

Newfoundland Dental Association

The fourth annual meeting of the Newfoundland Dental Association was held at St. John's on November 8th, and was well attended by dentists from all parts of the island as well as Dental Officers from Pepperrell Air Force Base.

The Society was privileged to have as special guests this year Dr. K. M. Johnson, President, and Dr. D. W. Gullett, Secretary of the Canadian Dental Association as well as Colonel H. C. Harris and Major J. Bagnall of Number 12 Dental Corps at Halifax.

The Convention got under way on Thursday with registration at the General Hospital and a business meeting conducted by the President, Dr. J. N. Darcy. Excellent clinics were presented by Radiologist Dr. Bliss Murphy on Oral Carcinoma and by Major Bagnall on Prosthetic Dentistry. This was followed by luncheon when all present were entertained by guest speaker Mayor H. G. R. Mews. That evening the annual banquet was held at the Newfoundland Hotel when the President of the Canadian Dental Association, Dr. K. M. Johnson of Winnipeg was special speaker. Hon. James McGrath, Minister of Health for Newfoundland, also spoke at this dinner meeting.

On Friday, the Convention meetings were held at Pepperrell Air Force Base. Dental Officers Dr. Shia, Dr. Brock and Dr. Maslowski gave papers during the morning session and lunch was served at the Officer's Club. Dr. D. Gullett, Secretary of the Canadian Dental Association was the special speaker.

During the afternoon, Dental Officer Dr. Fedorowicz gave a clinic and the rest of the afternoon was taken up with films on Dental health, preventive dentistry and oral hygiene.

The meetings were held at the General Hospital on Saturady. Major J. Bagnall of the Royal Canadian Dental Corps gave a paper and films on Prosthetic Dentistry and Dr. C. H. Pottle, Superintendent of the Hospital for Nervous and Mental Diseases, spoke on Psychiatric Symptoms in Dental practice.

Colonel H. C. Harris, Commanding Officer of No. 12 Dental Corps at Halifax was guest speaker at the luncheon in the Newfoundland Hotel after which the final business meeting and election of officers took place.

The following were elected: President, Dr. D. K. Peters; Vice Pres., Dr. H. M. Brown; 2nd Vice. Pres., Dr. G. E. Mallam; Sec. Treas., Dr. H. J. Hann; Past Pres., Dr. J. M. Darcy.

The Convention closed with a dinner dance at the Old Colony Club which was greatly enjoyed by all.

G. B. C.

Ontario

Toronto Academy of Dentistry

On Thursday November 22nd, 1956, 465 fellows and guests of the Academy benefitted from and enjoyed the programmes presented to them by the Winter Clinic Committee under the Chairmanship of Dr. Robert W. Marshall.

The clinical highlight of the day was a closed circuit Television Clinic covering a complete Immediate Denture Service. Thanks to the close co-operation of the R.C.A. Victor Corporation, members and guests could view in detail and in comfort the proceedings over any one of twenty television screens. For the clinical teaching of numbers great or small this method has no peer.

Any two of the following excellent group clinics could be attended during the day: Dr. James P. Coupland, Radiogaphy — Dr. David C. Way, Orthodontics — Dr. Murray Robb, Some Causes of Failure in Periodontal Treatment — Dr. William A. Shand, Fixed Bridge Work — Drs. I. S. Brown, G. Anker and E. S. White, Symposium on High Speed Techniques — Dr. Arthur Arshawsky, Management and Progress of the Pulp-involved Anterior Tooth — Dr. Marjory Jackson, Correlation of the Radiographic and Clinical Examination of the Child Patient — Dr. T. R. Marshall, Our Future in Dentistry — Mr. Kenneth Burn, The Acquisition and Disposition of an Estate.

The luncheon meeting was superbly chaired by Dr. R. W. Marshall who introduced the speaker, Dr. Otto W. Brandhorst, secretary of the American College of Dentists.

Dr. Brandhorst discussed many aspects of professional affairs and referred particularly to the need for more adequate financial support for dental education. He stated that the first objective of any profession must be service to humanity. Dr. Brandhorst listed many needs:

—a need for a broader understanding of today's social problems and trends.

—a need to cultivate a broader understanding of our public relations.

—a need to find ways to offset governmental planning for the professions.

—a need to find ways and means of extending oral health services to greater numbers. These ways should be determined by dentists who are trained to offer suggestions.

—a need to find a proper balance between military needs and civilian use.

—a need to make an evaluation of training facilities for present and future, staffs, and effectiveness of preventive programmes.

—a need to find financial support for education and research.

—a need to develop financial plans for dental care.

—a need to study office management procedures in order to render more service, economically.

—a need to increase auxiliary services.

Dr. Brandhorst stated that the profession should be among the first to think in terms of health problems of the community.

During the day the Toronto Dental Nurses' and Assistants' Association and the Dental Nurses' Alumnal held a most successful meeting. Presiding chairmen were Presidents Gladys Cochrane and Mary Graham.

Dr. Harvey Milburn brought greetings from the Academy and Drs. Donald Rife and Gordon Johnston presented talks. Four members of the associations presented clinics — Jackie Elder, Maie Ilves, June Bridgman, and Jean Sharp.

Following the fellowship hour and dinner were the table clinics and exhibits. There were seventeen helpful table clinics and thirty-five enjoyable displays.

All in all — an excellent day. Congratulations and thanks to Dr. Robert Marshall and his team mates.

E. R. B.

Closed-Circuit Television at Toronto Academy

The first closed-circuit televising of a dental operation ever held at a Canadian dental convention took place in Toronto during the annual winter clinic of the Academy of Dentistry.

Some 500 dentists witnessed the demonstration which was presented by RCA Victor Co. Ltd., which pioneered closed-circuit television.

The operation was watched on 20 21-inch monitor screens set up in the convention hall of the Royal York hotel and it entailed the extraction of a patient's teeth and the fitting and insertion of an artificial denture. The entire proceedings consumed approximately two hours, with one phase being shown in the morning and the other during the afternoon.

The operation was carried out in a hotel room where the master camera was set up, and the dentists performing it gave a running commentary of the dental techniques involved.

The demonstration pointed up the use of closed-circuit television in bringing into full close-up the relatively small oral cavity and the step-by-step techniques employed.

The televised dental operation was carried out by four Toronto dentists, Dr. R. E. Diprose, Dr. J. F. Methven, Dr. Frank Martin and Dr. A. C. Robinson.

Experiments with closed-circuit television have been carried out on a small scale by the University of Toronto's Faculty of Dentistry as a means of providing dental students with more adequate visual facilities in practical dental instruction.

By this method, it is possible for one teacher to instruct a class of 100 or more students, as compared to the present system where classes have to be split up into seminars of six to eight students to watch dental techniques.

The new building of the University of Toronto's Faculty of Dentistry will be equipped with a "television studio" for the installation and use of closed-circuit television.

A few dental colleges now use the system in the United States, and it is regarded as highly successful. The University of Saskatchewan's medical school has a system set up for visual education in brain surgery.

The heart of the closed-circuit television is a small tube — six inches long and one inch in diameter — known as a Vidicon tube — which is located in the television camera. The Vidicon tube was perfected by RCA's laboratories in New Jersey, and now serves as the basic element in most closed-circuit television, regardless of manufacturer.

More than 100 applications for closed-circuit television already are in use, including underwater exploration, visual education, rescue work, wind tunnels, medicine, military security and traffic control. Many department stores use it as a means of combatting shoplifting which is responsible for the loss of millions of dollars in merchandise monthly.

Cost of a closed-circuit TV unit is about $5,000.00.

Messrs. Black and McCutcheon Honoured

Members of the dental and medical professions and the University of Toronto recently honoured George M. Black, Jr., and M. Wallace McCutcheon for their work as co-chairmen of the Dental Research Fund Campaign.

A testimonial dinner was held at the York Club to mark successful completion of the campaign. Corporations, foundations, and interested private citizens contributed $104,650.

The campaign was initiated to support the first dental research centre in Canada. Its objectives are to place increasing emphasis on prevention, since treatment cannot reduce dental disease.

Prevention of disease depends upon new knowledge made available from research laboratories. But before 1950 dental research in Ontario was carried out by one man in one laboratory. Thus the need was apparent for greater research facilities and additional trained reseachers.

The University of Toronto Division of Dental Research, as a result of the successful campaign, has now been firmly established. It includes four full-time senior research personnel, five part-time investigators, four technicians and seven graduate students.

University of Toronto Dental Alumni Association

Dr. James Crawford was elected president of the Dental Alumni association recently. He succeeds Dr. Ernest Rollaston. Other officers elected were: Dr. Robert Leuty, president elect; Dr. B. Gross, secretary; Dr. Harry Hunter, treasurer and Dr. William Nursey, assistant treasurer.

London Dental Society

The essayist was Dr. Edgar James, prominent Detroit periodontist, when the London and District Dental Society met on Saturday evening December 1st at the Hotel London.

Dr. James presented a scientific essay on "The Common Denominator of all Phases of Dentistry" (Occlusion) which he illustrated with color slides and models.

The speaker was introduced by Dr. Bruce Taylor and thanked by Dr. Charles Peterson.

At the following meeting of the Study Club of the Society held on Thursday December 13 Dr. Alan Dinniwell led a discussion of the theories presented by Dr. James.

During the business meeting it was moved by Dr. Peter Currie that the appreciation of the society be extended to the London East Lions Club for their concrete interest in dental health as shown by the contribution of $4,400 for new dental equipment to completely furnish one dental operating room of the dental clinic at Victoria Hospital.

D.E.W.

London Dentists Detroit Speakers

Six members of the London Dental Study Club, Dr. Peter E. Currie, Dr. James A. Guest, Dr. James G. Millar, Dr. John A. Reid, Dr. Bruce Taylor, and Dr. Robert J. Wainwright were invited to present the topic "Interceptive Orthodontics for the General Practitioner of Dentistry", at the fifteenth annual review of the Detroit District Dental Society, November 26 and 27.

There were six general scientific assemblies.

Essex County Dental Society

Dean R. G. Ellis was honoured by the Essex County Dental Society at their November meeting, held in the Ballroom of the Prince Edward Hotel in Windsor on Tuesday, November 27th. This being the tenth year for Dr. Ellis as Dean of the Faculty, the local association presented him with a Barometer as a memento of the occasion.

Dean Ellis spoke to the fifty dentists assembled on "What is Happening to Dental Education?" Besides presenting the trends in our day, considerable time was spent in outlining the progress which has taken place at Toronto in respect to our new dental school.

On hand to give testimonials to Dean Ellis were Dean René Rochon of the University of Detroit and Dr. Robert E. Moyers representing the University of Michigan.

W. J. P.

Kingston and District Dental Society

The Kingston and District Dental Society held its November meeting in Morrison's Lounge. Dr. J. H. Johnson, professor of oral surgery in the faculty of dentistry, University of Toronto, was the clinician. He lectured in the afternoon on oral surgery and after dinner his subject was "The Management of Dental Oral Infections."

Dr. Harvey Campbell, president of the Society, presided at the dinner meeting. During the business session Dr. J. H. Gowland moved that the Eastern Ontario Dental Association be invited to hold its 1958 convention in Kingston.

There were 27 dentists present at this extra-mural lecture arranged by the faculty of dentistry, University of Toronto, in cooperation with the Kingston and District Dental Society.

Quebec

Mount Royal Dental Society

Mount Royal Dental Society presented two Montreal dentists with honorary mem-

berships for their "outstanding contributions to the profession" at the society's 35th anniversary dinner recently.

The awards were presented to Dean Ernest Charron of the University of Montreal Dental Faculty, and to Dr. Gerald Franklin, professor and chairman of the department of orthodontics at McGill University.

Dr. P. Gitnick, of the department of periodontia, McGill University, announced that an annual memorial lecture, sponsored by the society, will be held in the memory of the late Dr. D. P. Mowry, former dean of the faculty of dentistry at McGill University.

Saskatchewan

College of Dental Surgeons

As a result of acclamations to the Council of the College of Dental Surgeons the following were elected: Dr. J. P. Whyte, Swift Current; Dr. A. Duff Leask, Moose Jaw; and Dr. R. O. Brett of Regina.

Moose Jaw Dental Society

Officers elected for the year 1956-1957 are as follows: Dr. Ted Bradley, President; Dr. Don Kroshus, Vice-President; Dr. Gordon Beesley, Secretary-treasurer.

The Society welcomed to their membership Dr. John Zaparinuk. He is a Moose Jaw boy who graduated from the Faculty of Dentistry of the University of Alberta this spring. He also holds his B.A. degree from the University of Saskatchewan. He has taken over the practice of the late Dr. Alex Lowey.

Saskatchewan Dental Association

The S.D.A. Dental Public Health Committee are working on plans for a "Dental Health Day", which will be the 6th of February. It is expected that every dentist will be called on to participate. The committee is chaired by Dr. F. Wihak and is comprised of Drs. K. Martin, O. Brett and B. Bookhalter.

The Regina Dental Society have planned a year of activity, stressing Preventive Dentistry and Periodontics. Clinicians on these subjects will be the highlights of this program.

L. D. H.

GENERAL NEWS

The value of fluoridation of public water supplies in reducing tooth decay may be greater than first supposed. This evidence is found in papers presented at the 84th Annual Meeting of the American Public Health Association in Atlantic City, New Jersey. The speakers were staff members of the National Institute of Dental Research, National Institutes of Health, Public Health Service, U.S. Department of Health, Education, and Welfare.

Dr. F. A. Arnold, Jr., Director of the Dental Research Institute at Bethesda, Maryland, pointed out that all recognized scientific studies have "demonstrated the certainty of this method as a public health procedure for securing better dental health."

Dr. Arnold emphasized the Grand Rapids-Muskegon, Michigan study of water fluoridation as an example of a long term investigation aimed at determining the value of fluoridation. This study he compared with two others, one in Canada and the other in New York State, both of which confirmed the findings at Grand Rapids on the value of fluoridation as a means of reducing tooth decay.

The Grand Rapids-Muskegon study, he said, began in 1944, at which time Grand Rapids was preparing to add a fluoride to its water supply, while the Muskegon water supply continued without the addition of fluoride. The results were then observed over the next eleven years by examining the condition of the teeth of school children

in the two cities. However, it became evident after even four or five years that the children in Grand Rapids had fewer cavities in their teeth than those in Muskegon, although they were about the same when the study began. Finally, Muskegon authorities decided that what was good for Grand Rapids would also be good for Muskegon and fluoridation of the public water supply of Muskegon was started in July 1951.

The comparison of the two cities continued, although, as time went on, the value of fluoridation in Muskegon was also being demonstrated. The difference between the condition of the teeth of the children in the two cities is less noticeable today, and it is expected that all differences will soon disappear as fluoridation continues in both cities.

Dr. Arnold further pointed out that "sound scientific evidence shows that these beneficial results (of fluoridation) are not confined solely to those born subsequent to the inauguration of fluoridation." Children 16 years of age in Grand Rapids who were five years old when the study began and whose teeth had been formed also benefited from the fluoridation program. The original concept was that only the permanent teeth of those children born subsequent to the introduction of fluoridation would benefit from the introduction of this salt.

These findings in Grand Rapids have been corroborated, according to Dr. Arnold, in studies conducted in Brantford, Ontario and Newburgh, New York. Dr. Arnold, in commenting on the results of other investigations which were presented today in the same panel by Drs. I. Zipkin, A. L. Russell, and R. L. Hayes, principal investigators at the National Institute of Dental Research, said that the previous scientific decision that fluoridation would not be harmful is further substantiated by the evidence given in two of these studies. The study by Drs. Isadore Zipkin and Nicholas C. Leone, was concerned with the ability of the body to throw off an excess amount of fluoride which had been taken into the body as a single dose by people drinking fluoridated water. The subjects under study refrained from drinking tea or eating fish during the study since these items contain relatively large amounts of fluoride.

Various studies have been made by other investigators on the urine excretion of fluorides to demonstrate the body balance which automatically takes care of variations in intake of fluorides. Dr. Zipkin and his colleague, Dr. Leone, measured the urinary excretion of excessive fluorides over short periods of time. Previous studies used much longer time intervals. The results obtained in this study show that the kidney excretes the largest portion of an extra dose rapidly within the first hour after ingestion.

Dr. Russell, another panel member, presented findings on whether fluorides, while they might help reduce the number of cavities in the teeth, might produce or stimulate the production to periodontal disease. or pyorrhea, as one form of this dental disease is known. Dr. Russell demonstrated in a study of 20,000 persons ranging in age from 7 to 78 years, that fluoridation is not a factor in causing periodontal disease. This is especially good news to older age groups who suffer most from this form of dental disease.

Dr. Hayes, in his paper, reported the results of a joint study with N. W. Littleton and C. L. White which provides further evidence to indicate the value of fluoridation. This study shows that children with first permanent molars which had already erupted when fluoridation was initiated in Grand Rapids had fewer and smaller cavities than those living in Muskegon who had had shorter contact with fluoridation. Dr. Hayes further pointed out that these results are most significant since these teeth are less protected than others in the mouth and therefore would be expected to have more cavities.

In all the fuss and fury over fluoridation, and its possible if mythical, dangers, the importance of tooth decay itself as a menace to health has been largely forgotten. Tooth decay is a disease which destroys teeth and it is a rather grim experience for the human who has to go through life minus a large part of the machinery with which nature provided him to prepare food for digestion.

Common sense is sufficient, without too much scientific investigation, for us to know that poor mastication may well mean poor digestion, poor nutrition and as a result poor health and perhaps a shortened life.

Dr. Gordon Bates,
General-Director, Health League of Canada.

IN MEMORIAM

H. E. Halpin:—Dr. H. E. Halpin died suddenly at his home in October 1956. He was 58 years of age.

Born in Portage la Prairie, Man., Dr. Halpin was educated at Lacombe High School, the University of Alberta and graduated in dentistry from MrGill University, in 1926.

After practising in Edmonton and Lacombe, Dr. Halpin practised in Rimbey for 14 years. He went to Calgary in 1939 to join the Royal Canadian Dental Corps at the outbreak of World War II. In World War I he served in the infantry from 1915 to 1918 and was twice wounded in battles at Vimy Ridge and Arras.

He served during World War II as second in command of the Dental Corps in Calgary, with the rank of Major, and in 1946 entered private practice in Calgary until 1952, when he retired. Dr. Halpin was also with the department of health and was in charge of dental work at the Baker Memorial Sanatorium.

Dr. Halpin was an ardent hunter and fisherman and took a great interest in all sports. He was a tennis player of note.

Dr. Halpin was a member of the Dental Corps Reserve, the Canadian Legion Branch No. 1, the Garrison Officers' Mess, the Canadian and Alberta Dental Associations and the McGill Alumni Society.

Dr. Halpin was predeceased by his wife Bertha in 1952. Surviving are two daughters, Miss C. B. Halpin and Mrs. F. W. Clark, both of Calgary; four brothers, Jack, Calgary; Claude, Red Deer; Charles, Swift Current; and Harry, Edmonton; four sisters, Mrs. R. G. Hobkirk, Olds; Mrs. G. Penrose, Red Deer; Laura Halpin, Olds, and Mrs. H. Billan, Calgary.

William Jamieson Curry:—Dr. William Jamieson Curry of Vancouver died in Seattle on November 3 at the age of 49.

A native son of Vancouver, he graduated from North Pacific College at Portland, Oregon in 1932, and practiced in the Birks Building, Vancouver until a few years ago. Earlier this year he moved to the U.S.

The son of Dr. W. J. Curry, a pioneer dentist of B.C., he was well-known in Vancouver yachting and skiing circles. Dr. Curry was unmarried and is survived by his mother in Vancouver.

Maurice Pivnick:—Dr. Maurice Pivnick died at his home in Toronto on November 24, 1956. He was 69.

Born in Russia, Dr. Pivnick entered the University of Toronto soon after coming to Canada in 1902. He graduated with a science degree in 1908, in engineering in 1909 and in dentistry in 1913.

He was a past president of the engineering alumni at the University of Toronto.

Dr. Pivnick was a member of the board of governors of the former University Avenue Synagogue and a member of Mount Sinai Masonic Lodge and B'nai B'rith Toronto Lodge.

He was a past president of B'nai Zion, and one of the founders of the Toronto Hebrew Free Loan and the Toronto Hebrew Free School.

Surviving are his wife, two daughters, Mrs. A. Stein of Chicago; and Mrs. L. Glassman of Baltimore; a son, Nathan Pivnick, Q.C., of Toronto; a sister, Mrs. E. Levy of Los Angeles, and two brothers, David and Alex, both of Toronto.

Wallace Valentine Hazelwood:—Dr. Wallace Valentine Hazelwood died suddenly at his home on October 28, 1956, he was 58.

Dr. Hazelwood was born in Saint John, New Brunswick and received his early education there. He graduated from Saint John's High School. At the outbreak of World War 1, Dr. Hazelwood enlisted with the Canadian Dental Corps and served with the Siberian expedition during the latter part of that war. On his return he settled in St. John, N.B. as a dental technician and in 1942 he received his license to practice dentistry. He carried on a private practice until his sudden death. Dr. Hazelwood was a member of the Canadian Dental Assoc. and a member of St. Anne's Church, Letepec.

Surviving are his wife, one son Reginald, and a daughter Mrs. R. Stilwell. Also surviving are two brothers George, of St. John and Edward, of Edmonton, Alta., and two sisters, Mrs. J. Journeay, and Mrs. E. Clowes, three grandchildren, several nieces and nephews.

George Haycroft Ross:— Dr. George Haycroft Ross of Wingham, Ontario, died in

Wingham General Hospital on November 14th, he was 65.

His early life was spent at Brussels and in 1911 he graduated from University of Toronto Dental College. He was a member of the United Church, of Wingham Masonic Lodge and the R.A.M., a former member of the Board of Education, a charter president of the Lions Club, and in World War I served with the Dental Corps. He was a member of the local battery and Wingham Branch Canadian Legion.

Surviving Dr. Ross are his wife Irene, two daughters ,Mrs. Robert Martin and Mrs. John Allen, both of Toronto; one brother Dr. J. V. Ross, London; and four sisters Mrs. R. J. McLaughlin and Miss Gertrude Ross, both of Brussels, Mrs. G. Swartman, Sioux Lookout; and Mrs. Munro Blain, Toronto.

Daniel Norman Ross:—Dr. Daniel Norman Ross of Toronto, Ontario, died on December 7, 1956.

Dr. Ross was born in Solina, Ontario. He received his early education in Winnipeg and graduated from the Faculty of Dentistry in 1919. He practised in Winnipeg, 1904-29, then Toronto, 1929 to March 1953 at which time he retired. Dr. Ross also held the degree of M.D.—1904.

Dr. Ross held the office of Secretary to Manitoba Dental Association 1912-14; and President Manitoba Dental Association 1914-16. He was also Examiner for the Dominion Dental Council for 25 years; a member of Carlton Club in Winnipeg for a number of years and of the Granite Club, Toronto, since 1923.

Surviving are his wife, Vera, one daughter, Catherine, one stepson, Clayton Edward Fuller of Galt.

L. G. Campbell:—Dr. L. G. Campbell of Markdale, Ontario, died on November 11th in a St. Petersburg, Florida, hospital.

Dr. Campbell was born and received his early education in Orangeville, Ontario. He graduated from the Royal College of Dental Surgeons in 1896 and immediately went to Markdale where he practised until his death. During Dr. Campbell's residence in Markdale he instituted many improvements. He served on the Municipal Council and was the Conservative candidate for the South-east Grey federal elections of 1925, 1930 and 1935. He brought the Hydro to Markdale. In St. Petersburg he was president of the world's largest lawn bowling club, was a member of Christ Anglican Church, master of Hiram Lodge No. 490, A.F & A.M. in 1920 and was also an active member of the Loyal Orange Lodge. Dr. Campbell held many offices: Secretary Treasurer of the Central Ontario Conservative Association; president of the Ontario Cemeteries' Association; president and honorary member of the Canadian Telephone Association; member of the managing board of the Electrical Employers' Association of Ontario and honorary life member of the Royal College of Dental Surgeons. Dr. Campbell was also the secretary of Markdale's Centennial Committee in 1949.

Surviving are Mrs. Campbell, three brothers, Dr. Harold Campbell and Lyle L. Campbell of Orangeville, and Roy T. Campbell of Seattle, Wash., and three sisters, Mrs. Ed. Louideck of Berkeley, Calif., Mrs. M. E. Poapst of Orangeville and Mrs. E. M. Dorrance of Brantford.

Aaron M. Aronson:—Dr. Aaron M. Aronson died in October 1956.

A son of the late Mr. and Mrs. Louis Aronson, Dr. Aronson was born in Montreal. He was a graduate of the Montreal High School and the McGill University School of Dentistry.

He is survived by a sister, Mrs. M. Anderson of New York and a Brother, Myer, of Montreal.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th
1959	Halifax, Nova Scotia	June 21st-24th
1960	Ottawa, Ontario.	———

FUTURE EVENTS

Date	Function	Location	Officer	Address
Feb. 15, 1957	Faculty of Dentistry At-Home	Royal York Hotel, Toronto Ont.	Mr. Manny Norman	230 College St., Toronto 2B, Ont.
Feb. 21, 1957	Dental Workshop Conference	Royal York Hotel, Toronto Ont.	Dr. F. H. Compton	City Hall, Toronto, Ont.
May 12-15, 1957	Ontario Dental Assoc. Convention	Toronto, Ont.	Mrs. R. E. Booker	234 St. George St., Toronto 5, Ont.
May 16-18, 1957	British Columbia Dental Assoc. Convention	Empress Hotel, Victoria	Dr. Ross Upton	Executive Secretary, 217 Medical-Dental Bldg., Vancouver 1, B.C.
Aug. 19-22 1957	Pacific Coast Dental Conference	San Diego, California	Dr. C. W. Gilman, Secretary	219 E. 8th Street, National City, California
Sept. 7-14, 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England

GRADUATE COURSES

Faculty of Dentistry, University of Toronto

Applications will be received up to March 1st for enrolment in postgraduate courses leading to specialist certification in the fields of Dental Oral Surgery and Anaesthesia, Orthodontics, Paedodontics, and Periodontics. Enrolment in each course is limited, and the courses extend over a period of two academic years (Surgery three years). Applicants must present evidence of satisfactory completion of courses leading to the D.D.S. degree or its equivalent from an acceptable dental school.

For further information and application forms address inquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto, Ontario.

SHORT GRADUATE COURSES

ORTHODONTICS

March 11-15, 1957 **Enrolment Limit 12**

This course is designed for the general practioner. It comprises a review of anatomical structure, the development of head and jaws, normal occlusion and, in addition, the aetiology of malocclusion, tissue reaction during orthodontic therapy and modern therapeutic methods for the interception of malocclusion. Laboratory and clinical periods will be scheduled to include patient examination, appliance construction and manipulation. Sessions will be scheduled during which registrants may present practical cases for consultation and discussion.

The course will be under the general direction of Dr. D. G. Woodside.

Tuition Fee $100.00

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3, 1957 **Enrolment Limit 12**

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post-operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fracture of the jaws, cysts, root resections, abnormal frena, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee $100.00

New York University College of Dentistry—Periodontia and Oral Medicine Refresher Course.
Date: February 20-May 1, 1957, Wednesdays
Time: 4 P.M. to 6 P.M.
Fee. $211.50 including tuition, books, instruments.

This course will be given by Professor Samuel Charles Miller and Associates. For further information write: Secretary, Postgraduate Division, New York University College of Dentistry, 209 East 23rd St., New York 10, N.Y.

Volume 23
Numéro 1
Janvier 1957

Journal
E L'ASSOCIATION DENTAIRE CANADIENNE

Foyers d'Infection d'Origine Dentaire

par JEAN GAREAU, B.A., D.D.S., Iberville

Nous avons à traiter des foyers dentaires d'infection en relation avec les maladies constitutionnelles.

Nous osons le faire, sans pour cela, prétendre vouloir nous immiscer dans les controverses qui, à l'heure actuelle, divisent les auteurs et le monde dentaire sur le problème des foyers buccaux d'infection. Cependant nous attacherons une attention particulière au rôle des foyers dentaires en relation avec les infections généralisées et leurs manifestations organiques. Nous nous proposons de faire le point des différentes théories émises sur le sujet, de les discuter ou à tout le moins d'établir celles qui, de nos jours, recueillent la faveur des dentistes.

Le mécanisme par lequel les microorganismes s'attaquent à l'hôte humain peut être d'origine endogène ou exogène. Il sera d'origine endogène chaque fois que les bactéries emprunteront la voie sanguine, lymphatique ou humorale. Tandis qu'on le considérera comme d'origine exogène lorsque les microbes s'attaqueront à l'hôte par la voie orale ou respiratoire. On considérera comme endogène les foyers périapicaux d'infection comme les granulomes, kystes, pulpites, rétention d'apex ou de racines, et comme exogène les foyers gingivaux d'infection, les maladies du péridontium et des muqueuses buccales.

Il serait inutile et fastidieux de rappeler les caractères et l'évolution pathologique de chacune des maladies qui peuvent affecter les dents et les tissus qui les entourent. Nous nous bornerons plutôt au problème des foyers d'infection localisée et leurs manifestations dans l'organisme. Donnant un aperçu bref et succinct des maladies du péridontium et périapicales.

Hunter, en 1900, indroduit le concept moderne des foyers d'infection et de leurs manifestations sur l'organisme en général. Depuis ce jour, une pléiade d'auteurs et de chercheurs ont tenté de résoudre le problème tant par leurs observations cliniques que par leurs expériences de laboratoire.

En procédant par ordre chronologique,

nous passerons en revue quelques auteurs pour bien situer le problème tel qu'il se présentait à cette époque et suivre son évolution jusqu'à nos jours.

Dès 1912, Duke[1] publiait un volume dans lequel il traite des expériences de Billing et Rosenow en regard de l'influence métastatique et toxique des foyers primaires d'infection.

Billing définit le foyer d'infection comme une zône circonscrite de tissus infectés par des microorganismes pathogénes[2].

Une autre définition plus complète, d'après Billing, décrit les foyers d'infection comme:

> "Une condition métastatique systémique ou locale due à des microorganismes infectieux ou à leurs toxines, transortée dans le courant sanguin ou lymphatique d'un ou des foyers d'infection."[3]

A.—*Infection Métastatique et Facteurs Influençant la Métastase*

Ce changement de siège dans la localisation de la maladie se produirait:

1) par extension directe aux tissus adjacents;
2) par transport le long des muqueuses et séreuses;
3) par le courant sanguin et lymphatique.[4]

Comme nous pouvons le constater, nous retrouvons ici la théorie généralement admise du mode de transport des bactéries dans un organisme infecté. Cette mutation ne serait possible que si l'individu malade est sensibilisé aux groupes bactériens ou s'il présentait des conditions de moindre résistance consécutives à des troubles de digestion, fatigue, malnutrition, abus d'alcool, grossesse, lactation, anémie, diabète, en un mot toute affection débilitante qui mine la résistance générale de l'organisme à l'égard des agents traumatiques extérieurs.

1.—*Affinité Sélective des Bactéries*

D'après les expériences de Rosenow et Billing sur l'affinité sélective des bactéries pour un tissu donné, il y aurait deux facteurs qui rendent cette élection tissulaire possible:

a) les foyers primaires d'infection et leur environnement;
b) la virulence des bactéries et la résistance du malade.

Ces deux facteurs découleraient des conclusions tirées des observations de ces mêmes chercheurs[4] sur le sujet:

1) que les membres du groupe streptococcus pneumococcus peuvent développer une affinité pour ces tissus non seulement pendant la croissance dans ces tissus particuliers, mais aussi durant la croissance dans un foyer primaire d'infection.

2) qu'un foyer dans un tissu spécialisé semblerait moins important comme distributeur de bactéries qu'un foyer primaire d'infection. Ils croient que des bactéries qui se développent dans un foyer primaire non localisé, dans un tissu spécialisé, peuvent changer dans leur affinité et envahir un type de tissu l'un après l'autre.[4]

Lorsqu'une lésion infectieuse se manifeste dans la bouche, qu'elle soit localisée aux dents, à leur apex, ou aux tissus du péridontium, elle réalise les conditions idéales d'un bon milieu de culture, à savoir: la chaleur, l'humidité et l'obscurité. De par leur localisation buccale, les bactéries sont assujetties à des variations de tensions d'oxygène. Ces variations de tension d'oxygène expliqueraient les mutations dont les microorganismes sont le siège. Nous savons, par les expériences de laboratoire, que lorsque les bactéries sont soumises à des tensions variées d'oxygène, elles changent dans leur caractère, leur nature et leur affinité. Enfin, ces variations du milieu ambiant changent aussi la perméabilité cellulaire locale et seraient un facteur de dissémination. Ce mécanisme disséminatoire serait accentué par la réaction hyperhémiante du tissu infecté.

2.—*Infection et Virulence*

Nous savons tous que lorsque des microorganismes ont envahi un hôte, ils acquièrent, dans certaines conditions, une virulence telle que leur hyperactivité permet une dissémination abondante tant par la voie sanguine que lymphatique et humorale. Les conditions qui font varier la virulence des bactéries sont dues aux facteurs que conditionne l'environnement.

Rosenow a fait d'intéressantes recherches sur le mécanisme par lequel les tissus étaient envahis. Il attribua la dissémination des bactéries à de petits foyers primaires d'infection. Il suggère:

> "qu'une maladie chronique ou aiguë peut être attribuable à une infection distribuée par un petit foyer d'infection et que les streptocoques distribués par lui peuvent causer une maladie systémique, qui parait d'une gravité hors de proportion avec l'activité d'un foyer original apparemment insignifiant."[4]

Si donc de petits foyers d'infection sont dispensateurs de troubles plus graves, généralisés ou localisés à d'autres organes, c'est donc que le mécanisme natural de défense de l'organisme a cédé devant l'envahisseur bactérien. Des agents plus virulents ont essaimé vers d'autres organes après avoir acquis une affinité nouvelle qu'ils n'avaient pas, alors que l'infection, grâce au mécanisme de défense élaboré par l'hôte, était circonscrite en un lieu bien limité. C'est la conclusion à laquelle arrive Rosenow, à savoir qu'un microorganisme en activité acquiert une affinité élective pour d'autres tissus.

Au cours d'une de ces expériences, il a remarqué qu'un groupe de bactéries isolées de différents tissus infectés et inoculées à des lapins produisent chez ces derniers des lésions du même type que celles produites par la bactérie sur un tissu donné. Il établit ainsi la spécificité des lésions sur un tissu donné lorsque l'infection est circonscrite. Mais si on isole des streptocoques obtenus d'une lésion comme l'arthrite aiguë, et qu'on l'inocule à un lapin, on remarquera chez ce quadrupède des lésions arthritiques mais aussi des lésions qui affectent aussi bien la vessie, la muqueuse gastrique que l'endocarde ou le myocarde.

La condition primordiale de l'invasion bactérienne chez un malade tient à la diminution de sa résistance générale ou locale. Citons encore une fois Duke:

> "La virulence générale d'un organisme est d'une importance considérable en pathologie et souvent cause l'invasion par l'infection de tissus pour qui les bactéries n'avaient pas d'affinités sélectives. Ceci est précisément le cas lorsque la résistance est basse."

La résistance chez un individu baisse localement lorsqu'elle est consécutive à une blessure, intoxication ou interférence avec les organites du sang. Ainsi une blessure locale peut prédisposer à l'invasion par des bactéries qui n'ont aucune affinité pour le tissu blessé. Exemple: une blessure locale à un os peut provoquer de l'ostéomyélite en rendant les tissus aptes à la croissance d'organismes qui d'habitude n'ont aucune affinité spécifique pour la moëlle osseuse.[4] Cette même résistance générale peut baisser quand l'organisme est atteint par des maladies débilitantes. Opie illustre l'action virulente des bactéries par l'experience suivante.

Il combine à l'empoisonnement des cellules hépatiques par le chloroforme, l'action infectieuse de bactéries virulentes qui provoquent dans les tissus hépatiques des troubles cellulaires analogues à l'atrophie jaune du foie et à une cirrhose hépatique. Ces changements sont conditionnés au degré d'intoxication des cellules hépatiques par le chloroforme, et à la virulence des microorganismes employés.

Opie fait remarquer qu'on est incapable de provoquer de tels troubles hépatiques par l'action intoxicante du chloroforme seul, ni par l'action des bactéries seules. Il s'explique ainsi le fait que des alcooliques invétérés ne présentent durant de longues années aucune manifestation de la cirrhose hépatique, mais qui peuvent présenter ces symptômes à la suite de réaction infectieuse inflammatoire locale; notamment chez les individus qui souffrent d'infection chronique comme un abcès dentaire, tuberculose, syphilis.

On nous objectera qu'après la disparition d'un foyer primaire d'infection, comme l'extraction d'une dent abcédée, le processus inflammatoire se poursuit encore longtemps dans le foyer secondaire. Cette particularité serait due au fait que les bactéries ont acquis une affinité pour les tissus où ils croissent, ou

bien que les microorganismes ont développé une résistance inusitée au mécanisme de défense. Ce qui rend difficile et incomplète leur éradication complète de l'organisme malade. Cela suppose une diète et une médication susceptible de renforcir la résistance générale du malade de manière à ce qu'il puisse combattre efficacement l'infection secondaire résiduelle.

B.—*Effets Toxiques d'un Abcès Dentaire*

Plusieurs auteurs ont remarqué au cours de l'évolution d'un foyer d'infection que le malade présentait des symptômes anaphylactiques et plus précisément allergiques. Lorsqu'une région quelconque d'un organisme est infectée, celui-ci met tout en oeuvre pour résister à l'invasion et à la destruction tissulaire. Tout l'organisme est en quelque sorte mobilisé pour organiser sa défense, que ce soit le système neuro-végétatif, lymphatique, humoral ou sanguin qui soit en cause. Alors on remarque chez ces individus des réactions inflammatoires cellulo-vasculaires variables avec l'intensité de l'agression, avec la nature ou la toxicité des germes.

Cette réaction cellulo-vasculaire se manifeste localement au niveau de la zone infectée par une première atteinte des cellules. A ce niveau, nous assistons à la multiplication des bactéries et à la métamorphose des éléments de tous les tissus qui sont soumis à un processus d'invasion microbien et au processus de défense de l'organisme[6]. (Roussy et Oberling).

Secondairement, nous assistons au niveau des tissus à la vaso-dilatation entraînant l'exudation séreuse accompagnée d'un accroissement de perméabilité cellulaire. Cette réaction hyperhémiante serait due à un phénomène réflexe d'axone se déroulant à la périphérie, et permettrait de libérer une substance agissant sur le tissu inflammé: cette substance, selon Lewis, serait l'histamine, et selon Menkin, serait un corps apparenté à l'histamine: la leucotoxine [6].

Ces substances et la présence de pus dans la région infectée produiraient des matières toxiques pour l'organisme: toxicité manifestée par le phénomène d'allergie ou d'anaphylaxie.

Par allergie, on entend "tout état dans lequel se trouve un sujet antérieurement infecté et qui subit pour la deuxième fois l'atteinte du germe microbien ou de ses produits" (5 Von Pirquet). L'allergie désigne aussi "le changement de condition causée chez l'homme et l'animal par les maladies infectueuses ou produit par inoculation des protéines étrangères qui causent une réaction chez l'individu, et spécialement si la protéine ou bactéries responsables sont réinoculées dans la circulation"[6].

Selon Von Pirquet, le contact infectieux chez un individu fait naître un anticorps nommé ergène qui a une fonction bactériolytique. Ce produit lytique se combinerait avec tout nouvel apport d'antigène pour donner un produit secondaire; l'apotoxine dommageable pour l'organisme. C'est la réaction locale cellulo-vasculaire de ces substances bactériolytiques qui expliquerait les réactions hypérergiques de l'anticorps.

Dans les réactions d'allergie, le processus évolutif est essentiellement hystiocytaire (Sezary) ou tissulaire (Zinsser et Bruno Blach) qui aurait au niveau des tissus une réaction lente avec l'étiologie ou la symptomatologie épidermique nécrosante. Tandis que l'anaphylaxie, selon ces mêmes auteurs, serait un phénomène essentiellement humoral avec manifestation pathologique foudroyante, pouvant entraîner la mort. En cas de survie, ces symptômes de choc anaphylactique peuvent disparaître.

En ce qui nous concerne, c'est la réaction tissulaire d'allergie, témoin de l'infection buccale ou localisée à un endroit quelconque de l'organisme qui nous intéresse.

Lorsqu'une protéine est introduite dans le tractus gastro-intestinal, elle subit l'action d'enzymes spécifiques qui la décomposent en molécules plus complexes. C'est la phase initiale dite de digestion.

Secondairement, ces molécules albuminoïdes sont absorbées et reconstituées en une protéine identique à l'animal qui la reçoit. C'est donc que les protéines d'une espèce sont spécifiques seulement pour une même espèce.

Or si, pour une raison ou pour une autre, ce processus normal de désintégration et d'assimilation protéinique est contrarié, comme cela arrive lorsqu'une protéine étrangère ou d'origine exogène pénètre dans la circulation sanguine, l'animal ou l'individu receveur est sensibilisé à cette protéine. C'est-à-dire que toute dose additionnelle de substances protéiniques inoculée à l'individu pourra entraîner des manifestations pathologiques d'ordre anaphylactique ou allergique. Ces manifestations seront d'ordre anaphylactique si le malade sensibilisé reçoit dans la circulation une dose massive de microbes. Elles seront d'ordre allergique si ce même individu est inoculé par doses minimes et successives. Dans le deuxième cas, l'individu présentera en plus de ses lésions infectieuses des symptômes épidermiques comme cela se présente à la suite d'infection aiguë ou chronique et dans des infections dentaires.

D'autres auteurs suggèrent que ce phénomène d'allergie consécutif à un abcès dentaire ou à toute autre infection serait dû non pas à la présence de la protéine étrangère, mais bien plutôt aux enzymes digestifs élaborés par les tissus pour détruire cette protéine. Ces enzymes entreraient en combinaison avec la molécule protéinique dissociée pour former un produit toxique pour l'organisme. Ces enzymes seraient éminemment spécifiques et seules capables de lyser le type de protéine qui a présidé à leur élaboration.

> "La faculté acquise par les tissus animaux pour fournir l'enzyme capable de détruire les protéines étrangères de certains types, et, à cause de cela, de libérer des produits qui sont toxiques à l'organisme animal est la condition connue comme le phénomène de sensibilisation."[5]

Cette sensibilisation peut sans contredit se présenter chez l'être humain à la suite d'infections comme l'oedème angioneurotique, l'urticaire, l'érythème consécutif encore manifesté par une attaque de rhumatisme articulaire aigu consécutif à une infection chronique, de tonsilite ou autre maladie infectieuse. Ces mêmes symptômes peuvent être observés à la suite d'amygdalite chronique ou d'un abcès alvéolaire, symptômes qui souvent disparaissent avec la suppression des foyers d'infection.

Vaughan, pour sa part, prétend qu'il y aurait affinité protéinique sélective, tout comme Billing soutenait l'affinité sélective des microbes pour certains tissus. D'après lui, les produits de combinaison exerceraient leur effet toxique d'abord avec les tissus avec lesquels ils sont combinés. Ainsi

> "un facteur tel que l'albumine toxique dérivée du procès alvéolaire infecté est lui-même une cause de changement organique dans le tissu normal sain."
>
> (Vaughan)

Pattinger met en cause le système neuro-végétif pour expliquer ce phénomène allergique manifesté par des lésions ou réactions épidermiques et autres, résultats d'un abcès dentaire. Selon lui, l'absorption par l'organisme de protéines étrangères aurait un effet stimulant sur le système vagotonique et sur le système sympathique dont le résultat immédiat serait de déclencher le processus dominant d'une infection dans sa période récessive, comme une tuberculose ou une syphilis chronique latente. Cette absorption protéinique déclencherait l'activité et la multiplication de bactéries en voie de récessivité. Ces troubles dus à la déjection dans l'organisme de produits albumineux d'origine infectieuse, plus certaines conditions activantes, telles que les troubles chroniques de l'asthme, l'hypersécrétion buccale, stomacale, intestinale telle que l'hyperacidité gastrique, hypertyalisme, colitite muqueuse, diarrhée chronique, constipation spasmique, etc., tels que les troubles fonctionnels du rein, de la vessie et des organes sexuels.

Vaughan a remarqué souvent la disparition de ces symptômes à la suite du

traitement de foyers primaires d'infection chronique. Finalement, comme on l'a mentionné, l'abcès buccal ou une infection chronique d'origine quelconque peut exercer une influence néfaste sur le cours d'une autre infection sans relation métastique et accroître les troubles fonctionnels causés par elles, tels que l'acnée, la furonculose, la paralysis générale, le tabès dorsal, la tuberculose, etc. . . .

Par conséquent, nous pouvons conclure que l'abcès ou l'infection buccale est cause d'intoxication systémique avec accentuation de symptômes pathologiques préexistants et non la cause directe de toutes ces maladies. Mais il ne faudrait pas oublier qu'ils peuvent être la cause déterminante directe de certaines maladies buccales et systémiques. Plusieurs cas de maladies consécutives à une infection primaire précipitante ont été cités pour illustrer que bien souvent l'extirpation d'un foyer primaire d'infection a été la cause initiale de la guérison d'un foyer secondaire. Qu'il nous suffise de passer en revue les exemples suivants.

Cas I—*Effet d'une petite infection sur l'évolution d'une tuberculose latente*

Exemple: Une infection chronique du nez et de la gorge influence l'évolution tuberculeuse d'un individu. Le plan de traitement local a une importance influente sur le traitement de la tuberculose.

Cas II—*Infections à manifestation épidermo-cellulaire*

Exemple: L'acnée, la furonculose sont influencées favorablement par l'extraction d'une dent abcédée.

Dr Richard L. Sutton

Cas III—

Exemple: Patient atteint de paralysie motrice qui doit s'aliter et laisser tout travail. Cet invalide souffrait d'amygdalite chronique et on remarquait même à l'examen clinique la présence de caries très nombreuses. Après avoir subi une intervention chirurgicale qui l'amputa de ses amygdales et après avoir reçu des soins dentaires, le malade recouvra la motricité de ses muscles et par le fait même la santé.

Cas IV—*Effet toxique d'un foyer d'infection*

L'extraction d'une dent abcédée, sans prémédication antibiotique préalable, peut avoir un effet toxique sur l'organisme et peut être suivie dans moins de 24 heures d'une réaction inflammatoire aiguë dans un organe distant.

Exemple: Un patient âgé de 60 ans, et relativement en santé pour son âge, se fait enlever 10 dents abcédées. Moins de 24 heures après, il développe une tonsilite folliculaire aiguë. L'infection, plusieurs jours après, gagne les gencives et les muqueuses orales s'étendant du menton au pharynx et à la langue, et donne une poussée de stomatite ulcérative extensive.

On doit remarquer que, dans ce cas, la réaction inflammatoire des amygdales est relativement distante de l'infection originale et qu'elle précède de quelques jours l'apparition de stomatite ulcérative. A la suite d'une extraction dentaire, on peut encore observer des réactions inflammatoires dans des organes plus distants du foyer primaire d'infection comme la douleur dans la région de la vessie, de l'appendice, de l'estomac et même dans les articulations.

Ces troubles illustrés par les exemples ci-dessus peuvent être interprétés comme des réactions à la dissémination des microbes et de leurs produits originant d'un abcès alvéolaire.

C.—*Effets Systémiques des Maladies du Péridontium*

Après avoir passé en revue les généralités des faits et des théories prouvant les influences métastatiques et toxiques des foyers d'infection, qu'il nous soit permis de nous attarder sur le mécanisme

d'action et les manifestations pathologiques des maladies du péridontium. Ces affections qui lèsent les tissus gingivaux et les muqueuses buccales ont une influence pathologique systémique encore plus marquée que celles qui siègent dans les régions périapicales parce qu'elles se trouvent en communication directe avec le tractus gastro-intestinal et le tractus respiratoire.

Les causes efficientes de ces lésions anatomiques localisées autour des dents sont éminemment dues à la présence dans la bouche de sacs ou de clapiers dentaires. Ces sacs ou clapiers dentaires, véritables réservoirs de débris alimentaires et véritables milieux de culture microbiens sont causés par des traumatismes initiaux purement mécaniques. C'est-à-dire , qu'à la suite de différents processus mécaniques anormaux comme les malocclusions, les rétentions d'aliment, les restaurations dentaires inadéquates (notamment les surplus gingivaux et occlusaux) peuvent engendrer des conditions pathologiques manifestées par la perte de fonction des dents occasionnant des gingivites à évolution plus ou moins grave. Ce n'est qu'à la suite de lésions ulcératives ou irritantes que les bactéries, hôtes saprophytes du milieu oral, passent à l'état parasite. Cette métamorphose de saprophyte à parasite n'est rendue possible évidemment que par la barrière inefficace qu'offrent à l'invasion bactérienne les tissus ulcérés.

L'invasion microbienne se produit par des voies multiples, comme la voie sanguine, lymphatique ou la transmission directe par extension tissulaire.

1.—*Transmission Sanguine Conditionnelle de l'Invasion Microbienne*

Plusieurs auteurs ont traité du mécanisme de transmission sanguine des bactéries de lésions locales à d'autres organes situés de part et d'autre dans l'organisme.

Tous, ils semblent attribuer la fréquence des manifestations pathologiques de ces maladies aux faits suivants. Et je cite:

1° *La grandeur de la zone de surface d'absorption*

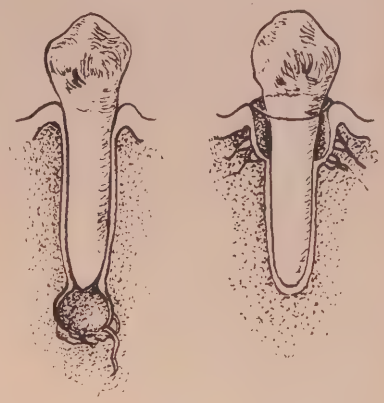

Diagramme comparatif entre un abcès dentaire et un clapier gingival montrant la grandeur de la surface et du drainage comparé du clapier.

2° *L'absorption du sulcus gingival est plus rapide* puisque le sang et la lymphe irriguant la gencive est beaucoup plus grand que la surface d'os périapical spécialement quand ce dernier sac est entouré par une couche de tissu de condensation ou d'encapsulation.

3° *La résistance à la croissance bactérienne est bien plus basse* dans un sac gingival que partout ailleurs dans la bouche

a) à cause de la rétention et stagnation d'aliments,

b) chaleur, humidité et variation de tension d'oxygène, véritable milieu de culture.

Billing prétend que certains types de bactéries trouvées dans l'arthrite déformante et le myositis croissent dans un milieu où la tension d'oxygène est basse et où l'oxygène présent n'est pas libre, et dans des conditions telles qu'elles puis-

sent exister dans des sacs profonds et des poches[7].

Imperatori[8] et Burman ajoutent: un foyer d'infection quelque part dans le corps peut être le résultat d'une alvéolyse chronique, cette dernière étant fréquemment l'agent causeur de l'arthrite.

Dans un autre ordre d'idée, mais relativement à l'invasion microbienne de l'organisme, Paquin établit qu'au cours d'un traitement pour périodontoclasie, il peut arriver de sérieuses complications postopératoires dues à l'invasion microbienne du courant sanguin par le streptococcus véridans, causant la mort dans certains cas à des lésions cardiaques et particulièrement l'endocardite bactérienne subaiguë[9].

Sand[10] a isolé de lésions péridontiles les bactéries suivantes:

Clapiers profonds	streptocoques veridans streptocoques hémolytiques staphylocoques aureus amibes
Clapiers superficiels	streptocoques staphylocoques pneumocoques et diplocoques bacilles et amibes

Le rôle du bacille fusiforme dans la gingivite ulcérative de Vincent a été démontré par A. M. Alden: sur 58 cas de maladie gingivale chronique, 52 présentent l'invasion par l'organite de Vincent[11].

Scott, Steigman et Convey supposent que la gingivite et la stomatite gingivale sont causées par le virus de l'herpes simplex[12].

Les facteurs et les agents étiologiques qui conditionnent l'invasion de l'organisme suscitent des controverses qui font encore de nos jours l'objet de violentes polémiques. Cependant, nous savons, grâce surtout aux travaux entrepris par le Sydenham Hospital de N.Y., que ces gingivites ulcératives nécrosantes ne sont pas contagieuses comme on l'a déjà prétendu.

Un patient avait été traité pour gingivite ulcérative nécrosante apportée d'un enfant de huit mois à qui la maladie était sensée être transmise par le contact buccal d'une cuiller avec laquelle sa mère goûtait les aliments. On n'a jamais pu prouver que les deux malades souffraient de la même maladie.

Au sujet de cette étude de la contagion, the Research Commission of the American Dental Association établit qu'au début on a soutenu que la maladie était grandement contagieuse. Aujourd'hui cependant, grâce aux recherches et aux observations cliniques de nombreux savants et auteurs, il est reconnu que cette théorie est fausse.

Roseburg dit au sujet de la gingivite ulcérative nécrosante de Vincent qu'elle n'est pas contagieuse en se basant sur la pathogénicité et l'étiologie de la maladie. Il a reconnu que les microorganismes trouvés dans la maladie sont des hôtes saprophytes normaux de la bouche.

Leur présence qui provoque les symptômes caractéristiques de la maladie, en les métamorphosant en parasites, n'est pas suffisante pour postuler que ces microorganismes pathogènes sont d'origine exogène et qu'ils pourraient se transmettre d'individu à individu. Il croit plutôt que ces symptômes seraient dus à un invasion bactérienne d'origine endogéne qui, à l'instar de la péritonite et de l'endocardite aiguë, serait induite par des parasites ordinaires de surface. En cela, Roseburg rejoint la théorie française actuelle qui soutient, avec le docteur Vincent, que la gingivite ulcérative nécrosante est d'origine uniquement endogène. Voici un bref aperçu de la théorie émise par le docteur Vincent[13].

Ces études expérimentales et cliniques sur l'origine des causes entraînant l'alvéolyse gingivo-dentaire le portent à croire que la formation de tartre serait d'origine endogène. C'est-à-dire que ces dépôts calciques seraient dus à du phosphate terreux d'origine sanguine.

"L'analyse chimique de la salive décèle que le phosphate trisodique domine dans la proportion de 0.95% environ, le phosphate terreux restant dans une moyenne de 0.09%. L'analyse du tartre donne des

proportions exactement inverses. Les éléments cellulaires du sang et le tissu osseux possèdent une haute teneur en phosphates terreux. Enfin, la coloration brune, verte ou rouge du tartre est due à la présence de biliverdine et de la bilirubine d'origine sanguine."

Le rapprochement des faits cliniques et chimiques incitent à penser que le tartre coloré prend sa source dans le sang des hémorragies gingivales consécutives aux phénomènes inflammatoires locaux de nature microbienne. Le tartre ne semble pas être la cause de la maladie. Il n'en est que la conséquence; comme nous le voyons, l'auteur de la théorie fait consister l'apparition du tartre comme cause adjuvente à la présence de manifestations infectieuses inflammatoires. Il prétend que l'hémorragie serait la condition sine qua non de la formation de calculs gingivo-dentaires. Ainsi, une lésion hémorragique chronique permettrait la formation de dépôt calcaire coloré au collet des dents. Pour accepter une telle théorie, il faudrait admettre une stase sanguine au niveau des poches intergingivales où, grâce à la stagnation sanguine, la déposition de sels minéraux constituants du sang aurait la chance de s'opérer. Or l'auteur fait de ces lésions microbiennes une condition hémorragique avec épanchement sanguin. Le sang entraînerait à l'extérieur ses sels minéraux qui seraient réabsorbés par la voie digestive. Nous savons aussi que la salive réalise une voie d'excrétion des minéraux toxiques ingérés par l'organisme, tout comme la sueur. Alors pourquoi vouloir minimiser le rôle de la salive comme agent vecteur de Calcium.

TABLEAUX DES CONSTITUANTS DE LA SALIVE
Composition de la salive mixte (en grammes par litre)

Eau	99.4 — 99.5
Substances organiques	3 — 3.4
Résidu sec	5 — 6
Constituants minéraux	1.8 — 2.2

Constituants minéraux:

K	0.5 — 1	(CO_3H)	1 gr. environ
Na	0.2 — 0.3	Cl	0.4 — 0.8
Ca	0.1	PO_4	0.1 — 0.2
Mg	0.01	CNS	traces variables

De plus, la salive jouit d'un pouvoir tampon par la présence d'une quantité importante de bicarbonate et d'une petite quantité de phosphate[14]. La coloration des calculs pourrait être due au contact sanguin des dépôts calcaires avec les pigments du sang.

Sans nier l'origine endogène de la maladie, l'école américaine actuelle élabore la théorie suivante, c'est-à-dire comme nous l'avons dit au début de ce chapître, que les premiers symptômes de désordres gingivaux sont dus à l'action mécanique et irritante de traumatisme gingival interdentaire par dépôt de tartre qui conditionne l'apparition de calculs et de poches gingivales; ces mêmes symptômes pouvant être aussi bien induits par des restaurations dentaires inadéquates, rétention d'aliments causée par des crêtes marginales inégales, défauts de points de contacts, et des clapiers au niveau des troisièmes molaires en éruption.

Secondairement, des agents microbiens s'y installeraient, et là, réalisant des conditions idéales de culture, s'y développeraient pour, par transmission sanguine, lymphatique ou humorale, s'en prendre à l'organisme tout entier. Ainsi des organites de Vincent d'abord localisés au tissu buccal pourraient, qui par la voie sanguine ou lymphatique, essaimer dans des organes voisins ou éloignés.

Vincent, dans sa théorie, semble attribuer la responsabilité des symptômes pathogènes qu'au bacille fusiforme qui porte son nom, et prétend pouvoir combattre efficacement la maladie au moyen d'un vaccin obtenu à partir de ces bacilles. Une telle thérapeutique semblerait vouloir ne s'attaquer qu'aux effets sans supprimer les causes signalées plus haut. Sceptique quant à la valeur vaccinothérapique, l'école américaine préfère s'attaquer aux causes efficientes en premier lieu et l'aider secondairement par une médication antibiotique et une diète qui augmente la résistance du patient.

Car, ne l'oublions pas, ces manifestations pathologiques extrêmes n'apparaissent qu'à l'occasion d'une résistance amoindrie chez un patient à la suite d'excès de fatigue ou de maladie débili-

tante. C'est la raison pour laquelle les Universités et Ecoles dentaires attachent tant d'importance, de nos jours, à cette nouvelle spécialité de la dentisterie qu'est la périodontie. C'est par une prophylaxie adéquate, qui comprend curetage et polissage de toutes les surfaces des dents ainsi que par l'équilibre adéquat des arcades dentaires, que les périodontistes prétendent induire tout traitement de périodontoclasie et traiter par la suite, au moyen d'une médication appropriée, les lésions présentes.

McCall a écrit que l'origine de bien des cas de périodontoclasie prenaient naissance au cours de l'enfance. Il prétend que la gingivite est très commune chez les enfants, et il considère ceci comme une phase dans le développement de périodontite[15].

Bunting[16], Broderick[17] et Brucker [18] soutiennent que les maladies du péridontium sont rarement rencontrées chez l'enfant mais sont propres aux personnes de 25 à 35 ans.

Schour et Massler rapportent que 40.2% des enfants d'Italie montrent des signes de maladie gingivale. Ces mêmes auteurs rapportent qu'une étude sur l'incidence de la gingivite sur des jeunes écoliers de Chicago suggère que la périodontoclasie est pratiquement inexistante dans ce groupe.

2.—*Foyers Périapicaux d'Infection*

Plus conservateurs, les auteurs et praticiens modernes ont mis au point des méthodes par lesquelles ils éliminent les foyers dentaires d'infection sans pour cela édenter tous les patients comme cela s'est pratiqué au cours du quart de siècle dernier. Plusieurs spécialités traitent de la conservation des dents, comme la dentisterie opératoire, couronnes et ponts, chirurgie et endodontie. L'endodontie, cette spécialité qui traite les foyers périapicaux en conservant intacte la structure anatomique et fonctionnelle de la dent, a mis au point une technique praticable par des dentistes d'habileté moyenne. Elle consiste à extirper la pulpe dentaire tout en conservant à la dent son intégrité et sa fonction dans la denture normale.

Ainsi le concept de "focal infection" est accepté comme une possibilité biologique, quoiqu'il reste encore des doutes considérables et de grandes controverses quant à leurs significations cliniques[21].

Nous emprunterons à Burket les discussions sur les foyers d'infection d'origine périapicale, comprenant une surface résiduelle d'infection dans une région édentée et la possibilité d'infection pulpaire.

Dans cette discussion sur la théorie du concept de "focal infection", Burket met en doute la valeur des preuves qui sont apportées pour soutenir le concept de foyer primaire d'infection. Il semble mettre en doute le contrôle rigoureux des expériences cliniques et les recherches de laboratoire et croire en la possibilité d'interférence par des facteurs difficilement éliminables qui entacheraient d'erreur les expériences dites concluantes qui ont été poursuivies sur le sujet.

> "L'amélioration qui suit occasionellement l'élimination d'un foyer suspect fournit à tout prendre une relation fortuite, accidentelle entre le foyer primaire d'infection et le processus de la maladie la plus distante." (21, cf. tableaux, pages 25 et 26)

Des auteurs comme Bierring, Rieman, Haven, Darlington, à la suite de leurs expériences et de leurs évaluations soutiennent le doute émis par Burket.

Frankel[22] analyse les verdicts dentaires et systémiques sur 1,900 personnes assurées par Metropolitan Life Company et trouve aucune relation entre les troubles systémiques et l' "extent" de la restauration dentaire qui furent considérés peut-être comme un indice possible d'infection.

L'étude statistique d'Appleton[23] ne démontre aucune augmentation dans le nombre quantitatif de maladies systémiques chez ces individus présentant un degré plus grand d'infection périapicale jugée par les examens cliniques et radiologiques.

Les études relatives à ce sujet d'Ornet

et Emis sur 800 étudiants ne montrent aucune relation entre l'infection périapicale et aucune entité particulière ne serait établie.

L'analyse de Ziskin[24] au sujet des changements radiologiques quantitatifs associés avec les données systémiques ne révèle aucune conclusion définitive par rapport au type ou aux dimensions de la surface radiolucente périapicale et les maladies systémiques.

Les cas individuels rapportés semblent soutenir la théorie de foyer d'infection et l'importance des foyers dentaires. L'étude plus approfondie contredit la théorie et ses preuves[21].

TABLE XXVIII

Frequency of Organisms Isolated from Two Hundred Six Periapical Areas

	Pure and Mixed Cultures No.		Pure Cultures No.	
	Per	cent	Per	cent
Streptococcus veridans	127	61.2	58	28.0
Streptococcus hemolyticus ..	21	10.2	4	2.0
Non-hemolytic streptococcus	35	17.0	3	1.4
Staphylococcus aureus	66	32.0	31	15.0
Staphylococcus albus	4	2.0	2	0.97
Escherichia coli	9	4.4	8	3.9
Pneumococcus	6	2.9	4	2.0
Gram negative coccus	9	4.4		
Gram positive rod (unidentified)	5	2.4	3	1.4
Pseudomonas aerogenosa ...	4	2.0	4	2.0
Gram negative rod (unidentified)	4	2.0	1	0.49
Eberthella typhosa	2	0.97	2	0.97
Diphteroids	1	.0.49	1	0.49
Hoemophylus influenza	1	0.49	1	0.49
Gram positive coccus (Unidentified)	1	0.49		
Micrococcus tetragenous	1	0.49	1	0.49

TABLE XXIX

Positive Cultures Obtained from Different Roentgenologic Groups

Group	No.	Per cent
XN	283	30.6
XPS	65	76.0
XPL	71	60

XN = cultures positives obtenues de dents sans surfaces périapicales observables.

XPS = cultures positives de dents avec de petits changements radiolucents.

XPL = cultures positives de dents avec de grands changements radiolucents.

TABLE XXX

Positive Cultures Obtained from Different Clinical Groups

Group	No. of Teeth	Positive Per cent
Non carious	92	43
Caricus	144	38
Restauration	115	50
Exposures	50	68
Pulpless	28	72

Puisque toutes les cultures furent prises sur des dents in situ, on croit que ces données représentent la présence actuelle de bactéries dans cette région et non la contamination par la flore buccale.

Conclusions

Toutes ces théories sur l'influence métastatique ou l'effet toxique des foyers primaires d'infection sont encore fort discutées et controversées, quant au mécanisme par lequel une infection localisée peut influencer le cours d'une maladie plus grave de l'organisme. D'aucuns prétendent nier cependant l'existence de ces foyers d'infection et de leur manifestation pathologique. Le concept de "focal infection" est unanimement admis aujourd'hui. Cependant, il y a eu, au cours de ces dernières années, des abus, car l'engouement des chercheurs et des dentistes pour éliminer les foyers primaires d'infection a porté les praticiens à supprimer toutes dents douteuses. C'est en réaction contre l'exodontie massive que Burket et, à sa suite, plusieurs auteurs prétendent nier l'influence systémique nocive sine qua non des foyers primaires d'infection. C'est pourquoi il existe aujourd'hui des méthodes plus conservatrices d'éradication de foyers d'infection et qu'il n'est plus permis au dentiste digne de ce nom de les ignorer.

Sommaire

L'avènement, en 1912, du concept de "focal infection" a fait faire de grands pas à la science dentaire. Si, au cours des expériences, il est arrivé de conclure fautivement, il n'en reste pas moins que les polémiques qui divisent les savants et chercheurs sont un stimulant puissant qui provoque des émulations que je qualifie-

rais d'internationales. Chaque nouvelle découverte est signalée dans des revues et au cours de congrès. Ces émulations permettent ainsi de prendre conscience que la bouche n'est pas une entité individuelle sans relation avec le reste du corps.

C'est une partie intégrante et vitale de tout l'organisme qu'il importe de maintenir dans un état sanitaire parfait. Toutes les lésions ou tous les désordres qui affectent la bouche doivent tôt ou tard avoir une influence néfaste sur l'organisme tout entier. Que ces manifestations pathologiques prennent des formes diverses, il n'y a rien d'étonnant là-dedans puisque le corps humain est une machine si complexe que nous ne pouvons aborder son étude que partiellement.

Au cours de l'étude que nous avons faite du status actuel des foyers d'infection, nous avons parlé des généralités qui conditionnent les troubles pathologiques buccaux. Puis nous avons glané dans des volumes et revues quelques théories anciennes et modernes qui étayent le concept de "focal infection". Enfin, dans la dernière portion de ce traité, nous nous sommes attardé sur les maladies dentaires qui auraient le plus d'influence sur l'état général.

N'oublions pas enfin que l'individu qui pénètre dans notre cabinet dentaire n'est pas uniquement une mâchoire en souffrance mais qu'il y vient avec tout un passé d'hérédité pathologique et de tares.

> "The dentist who sees persons who are presumably well has the opportunity to save more lives than the physician who rarely sees a person until he is seriously ill."

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Nouvelles de l'Association

Le Conseil de la Colombie britannique achète une propriété.

Le Collège des Chirurgiens-Dentistes a acheté un immeuble à Vancouver afin d'établir un secrétariat pour les organisations dentaires de la Colombie britannique. Cette propriété située au coin sud-ouest des rues Cardero et Robson a été payée $28,000. Il y a quelques mois, le Conseil du Collège avait nommé un comité, appelé lè comité des quartiers-généraux combinés, avec mission de s'occuper de la question de bureaux d'administration appropriés aux besoins. Comme résultat, ce comité a conseillé l'achat d'un terrain sur lequel on construira un édifice qui répondra aux besoins du Collège des Chirurgiens-Dentistes de la Colombie britannique, de l'Association dentaire de la Colombie britannique, de la Société dentaire de Vancouver et du district et d'autres clubs d'études.

500,000 Canadiens boivent de l'eau fluorurée.

D'après des compilations récentes, environ un demi-million de personnes boivent de l'eau fluorurée dans 23 municipalités du Canada. Au cours de l'année dernière, le nombre de citoyens qui bénéficient des effets de la fluoruration a augmenté de 200,000. Dès que des points de loi auront été éclaircis à différents endroits, on croit que le nombre des villes qui mettront du fluor dans l'eau de leur aqueduc augmentera considérablement.

Halifax adopte la fluoruration

Depuis le début de l'été, Halifax et Dartmouth ajoutent du fluor dans leur eau de consommation. A date, Halifax est la ville la plus importante au Canada à adopter la fluoruration. Ce n'est qu'en octobre que la capitale de la Nouvelle-Ecosse a officiellement annoncé qu'elle utilisait cette mesure de santé pubique. Entretemps, la ville n'a reçu aucune protestation de la part de ses citoyens. La province de Nouvelle-Ecosse établit donc ainsi sa position en face de la fluoruration:

Halifax	le 11 juin 1956	100,000
Darmouth	3 juillet 1956	30,000
Kentville	6 février 1956	5,000

La fluoruration aux Etats-Unis

Le Service de santé publique des Etats-Unis rapporte qu'au 1er octobre, plus de 30 millions de personnes, logeant dans 426 municipalités, consomment de l'eau fluorurée. Durant 1956, quelques six millions de personnes, habitant 171 villes différentes, se sont ajoutées au nombre de celles qui bénéficiaient déjà de cette mesure. Ce rapport indique que plus de la moitié des villes qui comptent de 500,000 à un million d'habitants utilisent la fluoruration.

La Ligue de Santé du Canada fixe une journée dentaire

La semaine nationale de santé est devenue un évènement d'importance pour inciter les Canadiens à jouir d'une meilleure santé. Cette année, la semaine du 3 au 9 février a été choisie pour être la semaine nationale de santé au Canada.

De plus, la journée du 6 février, un mercredi, a été désignée pour être la journée dentaire et la Ligue sollicite la collaboration des organismes dentaires. La Société Radio-Canada a promis de consacrer à cet événement des émissions spéciales sur son réseau Trans-Canada et sur celui de l'Est du pays. On tente d'élaborer un programme de télévision. On a préparé des communiqués pour les journaux et on essaie de retenir les services de groupements laiques pour donner plus d'ampleur à l'affaire. Tout les média possibles de publicité seront utilisés pour faire de cette journée dentaire un grand succès.

Centennaire de la Société dentaire de St-Louis

Le docteur K. M. Johnson, président de l'Association dentaire canadienne, a assisté à la célébration du centennaire de fondation de la Société dentaire de St-Louis, qui a eu lieu du 25 au 28 novembre. Le docteur Johnson y a représenté officiellement l'Association. Il a adressé la parole en compagnie d'invités distingués. La Société dentaire de St-Louis vient de compléter sa centième année d'activité ininterrompue et cette fête est célébrée par un Congrès dentaire du Milieu du Continent.

Rapport Chant au sujet des techniciens

Le comité nommé par l'Hon. Martin, Ministre de la Santé et du Bien-Etre de la Colombie britannique, vient de soumettre son rapport. Ce comité avait été assemblé pour étudier les objectifs du projet de loi no 121, plus particulièrement les items de la loi visant les contacts directs des techniciens avec le public pour la réparation des dentiers et ceux qui touchaient à la question d'association entre dentistes et techniciens. Le comité comptait des représentants du Collège des Chirurgiens-Dentistes de la Colombie britannique, de l'Association des Laboratoires dentaires, de l'Association des Techniciens dentaires, de M. Porteous, secrétaire du Ministère de la Santé et du

Bien-Etre et du doyen S. N. F. Chant de l'Université de la Colombie britannique, agissant comme président. Le comité a tenu neuf réunions de décembre 1955 à avril 1956.

Le rapport fait ressortir que la rémunération des techniciens dentaires n'est pas assez élevée, si on considère qu'ils sont des gens d'un métier délicat. Il souligne aussi que le public voit d'un mauvais oeil la division des honoraires entre les dentistes et les techniciens. Mais le rapport fait remarquer que cet état de choses n'a rien à voir avec les dentistes, puisque ceux-ci ont des revenus inférieurs à ceux d'autres professions ayant le même statut légal. La commission a étudié la question de la réparation des dentiers et rapporte que, dans certains cas, il faut prendre de nouvelles empreintes avant de procéder à la réparation tandis que dans d'autres cela n'est pas nécessaire. Le rapport traîte longuement de la question des réparations en disant que certaines réparations peuvent être effectuées par des techniciens qualifiés, mais la difficulté est de savoir quelles réparations le technicien peut faire sans que le patient ait à recourir aux services d'un dentiste. On peut lire dans le rapport qu'il serait prématuré de confier directement des réparations à des techniciens jusqu'à ce que ceux-ci disposent d'un moyen de se faire reconnaître comme des techniciens qualifiés.

Le rapport suggère que si on pouvait s'entendre sur la teneur d'un projet de loi d'une portée assez restreinte, on pourrait vraisemblablement apporter une solution au problème actuel et trouver des mesures qui iraient plus loin. La commission a annexé à son rapport un modèle de bill, qui avec certaines modifications, pourrait être approuvé par le gouvernement. Ce projet de loi recommande:

1) d'établir un Bureau de Techniciens dentaires;

2) que l'Association des Laboratoires dentaires et que la Société des Techniciens dentaires soumettent chacune une liste de six noms de leurs membres, qui exercent depuis au moins 5 ans et qui n'ont jamais été trouvés coupables de pratique illégale, pour constituer ce Bureau.

3) que le président de ce Bureau soit nommé par le Lieutenant-Gouverneur.

4) que ce Bureau ait le pouvoir de discuter avec l'Université de la Colombie britannique l'organisation de cours pour les techniciens, de nommer un comité d'examen, de décerner des certificates de compétence, de déterminer le cours d'études et en un mot, de diriger les affairs des techniciens.

Quant à la question de rémunération, la commission déclare "qu'il est difficile de voir comment le métier de technicein dentaire peut s'améliorer un tant soit peu, surtout sur la question des revenus, tant que les deux groupements de techniciens ne se seront pas entendus sur des problèmes qui sont communs à leurs intérêts. Il appartient aux gens du métier d'améliorer eux-mêmes leurs conditions de travail".

Le Collège des Chirurgiens-Dentistes de la Colombie britannique a fait les commentaires suivants au sujet du rapport Chant:

1) Le doyen Chant a clairement dit dans son rapport que seuls ceux qui ont reçu un enseignement professionnel approprié sont en mesure et pourront servir directement le public pour la prothèse dentaire.

2) Le doyen Chant souhaite la fusion des deux organismes de techniciens en un seul; un de ces organismes fait son travail dans la légalité, l'autre en marge de la loi. Le Collège ne croit pas que ces deux organismes "incompatibles" puissent se fusionner.

3) Le Collège croit que la suggestion d'établir un système standardisé d'entrainement et d'approbation de techniciens est excellente et qu'elle offre une solution fondamentale à longue échéance du problème.

4) Le Collège suggère fortement que la profession dentaire soit représentée sur tout comité dont la fonction serait de réglementer les cours d'études et les examens des techniciens.

5) Le Collège pense que la meilleure façon de hausser les revenus des techniciens serait de leur donner une meilleure formation.

Services nationaux de santé.
Déclaration de la Chambre canadienne de Commerce

Au cours du mois d'octobre, à sa 27e réunion annuelle tenue à Québec, la Chambre canadienne de Commerce a adopté la déclaration suivante: "Il faut tendre vers les meilleurs standards possible de santé. Un peuple en santé constitue une des valeurs les plus estimables d'un pays. Le problème de la santé nationale repose sur trois facteurs, (1) la prévention, (2) le traitement et la réhabilitation, (3) le soin des maladies chroniques et des incurables. La prévention des maladies et des accidents est le plus important de ces facteurs. Cette phase du problème doit se régler grâce à un programme acceléré d'éducation du public sur des questions de santé et sur des mesures de sureté. Il faut continuer à développer par tout le Canada des services et des facilités médicales appropriées; il faut augmenter le personnel médical entraîné, pour que le peuple canadien puisse compter sur lui quand il en aura besoin; cette question touche aussi à l'hospitalisation. La santé nationale ne dépend pas seulement des services de santé; elle est intimement liée à la question nourriture et logement. Les programmes de bien-être social actuels couvrent ces derniers aspects du problème et, en considérant les déboursés que fait le gouvernement pour les services de santé, il faut songer aux engagements annuels pris

pour l'assistance aux vieillards, pour la sécurité des vieillards et l'assistance aux familles; toutes ces classes de déshérités s'approprient une partie substantielle des impôts payés par les Canadiens.

La Chambre croit que, dans un pays libre, un individu a la responsabilité fondamentale de se prémunir contre et de payer les soins médicaux dont lui et sa famille ont besoin. La Chambre croit aussi que les Canadiens devraient établir une forte priorité aux dépenses nécessitées par la maladie pour eux-mêmes et leurs familles, quand ils préparent leur budget. La Chambre approuve ces employeurs qui aident leurs employés à solder leurs déboursés pour se faire traiter. La Chambre est favorablement étonnée de la rapidité et de l'ampleur que prennent les services volontaires et les systèmes d'indemnité pour des soins médicaux pré-payés. Ces plans volontaires devraient recevoir l'appui des employeurs, quand l'occasion s'y prête. Mais la Chambre réalise cependant que, malgré la protection que donnent de plus en plus ces plans volontaires, il y aura toujours des circonstances où des Canadiens devront faire face à des dépenses catastrophiques pour des soins médicaux. Dans ces cas, le gouvernement pourrait intervenir, soit par des adoucissements d'impôt sur le revenu, soit par d'autres moyens qu'il faudra étudier. On s'entend pour dire que le gouvernement doit jouer au rôle important dans l'organisation de facilités de santé convenables pour le Canada. La Chambre endosse le programme d'octrois pour la santé de la part du gouvernement fédéral et des gouvernements provinciaux et croit que ces octrois devraient être aussi généreux que possible; car il ne faut pas oublier que les revenus du gouvernement lui viennent de la population et que les obligations qu'il doit assumer tous les ans pour le bien-être social sont déjà considérables et sont appelées à augmenter. La Chambre croit que les contributions que le Gouvernements fait aux organisations privées de charité, qui s'occupent des malades indigents, devraient être augmentées d'une proportion plus réaliste.

La Chambre s'oppose à toute forme d'assurance-santé obligatoire ou de médecine d'état. Ces services de santé qu'on qualifie de "gratis" ne serviraient qu'à augmenter le nombre des demandes que la population leur imposerait. Tous sont d'avis qu'il est impossible de prévoir avec précision le coût probable d'un service national de santé qui serait obligatoire et qui couvrirait tout le domaine; le coût d'un tel service dépasseraient inévitablement et de beaucoup le montant qui est dépensé pour la santé aujourd'hui au Canada.

La Chambre n'approuve pas le projet du gouvernement fédéral de diviser avec les provinces le coût d'un plan d'assurance pour l'hospitalisation dans des salles publiques. Un plan du genre conduirait fatalement à un système d'assurance-santé obligatoire qui couvrirait toutes les phases de la maladie et enfin à la médecine d'état.

La Chambre croit que le gouvernement fédéral devrait fournir son aide pécuniaire directement aux régions où l'individu ne peut pas pourvoir à ses besoins, aux indigents, aux vieillards, aux malades chroniques et à ceux qui ont à faire face à des dépenses médicales qui sont au-delà de leurs moyens.

Statistiques d'impôt pour 1954

Le Ministère du Revenu national vient de publier ses statistiques annuelles sur les impôts payés par les contribuables. Les chiffres fournis par ces statistiques sont pour l'année 1954. Au cours de cette année, 4,120 dentistes canadiens ont payé de l'impôt sur le revenu. La moyenne des revenus nets de ces dentistes se chiffre à $7,896, et la moyenne d'impôt payé par eux se monte à $1,225. Le total de l'impôt payé par les dentistes représente 0.47% du grand total de l'impôt sur le revenu pour 1954. Quatre professions rapportent des revenus plus élevés que ceux de la profession dentaire: le génie et les architectes ($12,059); les avocats et les notaires ($11,925); les médecins et les chirurgiens ($11,891); et les comptables ($8,672). Dans la classification "Distribution des revenus par catégories d'occupations", les statistiques montrent que du nombre des dentistes ayant payé un impôt sur le revenu pour 1954, 310 (ou 7.5%) ont indiqué des revenus d'au delà $15,000, 810 (ou 19.7%) ont indiqué des revenus oscillant entre $10,000 et $15,000. Ainsi 27.2% des dentistes ont un revenu supérieur à $10,000 et 72.8%, en dessous de ce montant.

Prix de passage réduits pour le congrès de l'A.D.C.

En vertu du plan d'identification par certificat, l'Association canadienne des Passagers a consenti à des déductions sur les billets de train pour le congrès de l'Association dentaire canadienne, qui aura lieu à Winnipeg du 19 au 26 juin 1957.

Les dates autorisées pour les départs sont les suivantes:

Pour les points des lignes de l'ouest—de Port Arthur, Armstrong, Ont., à l'ouest du 15 au 24 juin inclusivement.

Pour les points des lignes de l'est—de Port Arthur et Armstrong, Ont., à l'est du 13 au 22 juin inclusivement.

De Terre-Neuve—du 11 au 20 juin inclusivement.

On peut obtenir des certificats d'identifi-

cation en écrivant au secrétaire de l'A.D.C., à 234 rue St-Georges, Toronto, Ont.

Don de Lord Nuffield pour la recherche dentaire

Au cours d'octobre, Lord Nuffield a présenté au professeur Wilkinson, doyen de la faculté dentaire du Collège Royal des Chirurgiens d'Angleterre un chèque de $100,000 pour établir une chaire de recherches dentaires dans le collège. Dans son discours de remerciements, le doyen a précisé que ce geste marquait une date importante dans l'histoire de la dentisterie et dans celle du collège. L'argent sera utilisé pour organiser une chaire de recherches et le professeur qui en sera le titulaire agira comme chef du service de Sciences dentaires, qui a été fondé récemment grâce à des dons généreux reçus d'un groupe d'industries.

Nomination du docteur J. B. Macdonald

Le docteur John B. Macdonald vient dêtre nommé directeur du Forsyth Dental Infirmary for Children et professeur de bactériologie buccale à l'Université Harvard, école de médecine dentaire. L'Université Harvard et les gouverneurs du Forsyth Infirmary ont annoncé cette nomination le 2 décembre dernier. C'est la première fois depuis leur affiliation en 1955 que ces deux institutions font part d'une nomination conjointe.

Avant d'occuper son poste actuel, le docteur Macdonald était président de la division des recherches dentaires et professeur de bactériologie à la faculté dentaire de l'Université de Toronto. Jusquà récemment, il fut membre et président de la section dentaire du Conseil National des Recherches. Ses recherches ont surtout porté sur les infections des muqueuses de la bouche et sur leurs relations avec les pathologies des tissus avoisinants. Au printemps de 1956, l'Université de la Colombie britannique a rendu public un rapport préparé par le docteur Macdonald sur l'urgence de fonder là une faculté dentaire. Né à Toronto, le docteur Macdonald a obtenu son D.D.S. de l'Université de Toronto, en 1942, sa maitrise en science en bactériologie de l'Université Illinois, en 1948, et son Ph.D. en bactériologie à l'Université Columbia, en 1953.

Le docteur Macdonald succède comme directeur de l'Institut Forsyth au docteur Howard M. Maryeson, décédé en septembre 1955.

Rapports de journaux

—Une nouvelle école construite à Edmonton pour les enfants muets au coût de 2 millions de dollars renferme un cabinet de dentiste.

—Le Bureau des Statistiques rapporte que durant la troisième semaine de novembre 1956, le coût des traitements médicaux (frais d'hospitalisation, honoraires de médecine et de dentistes) ont augmenté de 4.5 points depuis l'année dernière.

—Un référendum a rejeté la fluoruration par la petite majorité de 102 votes à North Battleford, le 31 octobre dernier. Le docteur C. F. W. Hames, chef du Service de Santé, a déclaré que les résultats du vote seront analysés avec soin et qu'on continuera à éduquer les citoyens en hygiène dentaire avec l'espérance qu'ils favoriseront la fluoruration, quand ils seront plus éclairés à son sujet.

La ville de Chicago adopte la fluoruration

La ville de Chicago, la deuxième plus grande ville des Etats-Unis, a commencé à fluorurer l'eau de son aqueduc le 1er mai dernier. Pour commencer, cette mesure affectera 1,300,000 citoyens de la section sud de Chicago et de 24 petites municipalités adjacentes.

L'installation des appareils de fluoruration et leur fonctionnement n'a commencé que le 1er juillet pour les autres 2,800,000 citoyens de la ville et pour 27 autres municipalités, qui achètent leur eau de Chicago. M. James W. Jardine, le commissaire de l'eau pour la ville, déclaire que l'aqueduc de Chicago manipule plus d'eau chaque jour que n'importe quel autre système au monde. Le coût total de l'installation pour la fluoruration à Chicago se chiffre à environ $475,000.00. Les déboursés annuels pour la main d'oeuvre et pour les produits chimiques seront de l'ordre de $650,000.00, soit 12½ cents, par tête. La fluoruration de l'eau de Chicago augmente à environ 25 millions le nombre des citadins, qui boivent quotidiennement de l'eau fluorurée aux Etats-Unis. Le nombre des municipalités qui utilisent cette mesure se monte à 1177.

Le rédacteur comparait devant la Chambre des Communes et le Sénat

Le docteur W. J. Dunn, rédacteur du Journal de l'Association dentaire canadienne, s'est adressé au comité de la santé, composé de députés et de sénateurs, le 9 mai dernier. Il leur a parlé de fluoruration et de santé publique. En parlant de l'attitude des professionnels sur ce sujet, il a déclaré:

"On se demande, en certains milieux, pourquoi une profession s'occupant de santé se montre favorable à une mesure qui en définitive enlèvera du travail à ses membres. Permettez-moi de vous dire que la dentisterie ne serait pas une profession, si elle ne désirait pas éliminer la raison d'être de ses services. C'est là l'objectif ultime de la médecine. C'est le but que poursuit la profession dentaire!"

Volume 23
Number 2
Toronto
February 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

"A Discussion of the Biologic Factors Involved in the Fixed Partial Denture"

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The scope of services for the partially edentulous patient has so many phases that we shall consider but a few. One pertains to the examination of the patient and the diagnosis; another, to the clinical application of the biologic sciences to the partially edentulous patient. A third involves the changes which take place in occlusal and jaw relationships when one or several teeth are lost and not immediately replaced; and finally, we must decide on the best method of treatment for the various oral conditions found.

Some questions may also be raised relative to this type of service: At what age may it be rendered to the patient; can it be used successfully in the young and adolescent patient as well as in the adult; under what conditions may it be employed in the senescent period of life; and what biologic factors influence the design and construction of the prosthesis?

Clinical records of several thousand bridge restorations during the past thirty years, disclose some interesting facts. Approximately 85% of all fixed bridges were made for patients between 20 and 55 years of age. When fixed bridges were employed in groups younger than 20 years, they were usually temporary in character serving the prime function of space maintenance. These were later replaced by permanent structures when the patients reached a more mature age.

It is recognized that the construction of a crown, a fixed bridge, or a removable partial denture is not merely a problem of mechanics and engineering. These

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mechanical structures serving as substitutes for lost teeth rest on and are supported by foundations which are responsive biologically to physical and mechanical laws.

A partial denture, whether it is fixed or removable, is a therapeutic appliance which not only replaces missing teeth, but also restores impaired or lost biologic functions. A lack of either the mechanical or the biologic requirements in a partial denture, fixed or removable, will result not only in the failure of the restoration itself but frequently in the loss of the supporting teeth also.

All partially edentulous patients cannot be grouped under one category. Each patient presents individual characteristic problems. In each, the aetiologic factors may differ and usually each type requires an individual plan of treatment. It is wise to listen to the patient's theory of the causes which produced the existing conditions; he may give a diagnostic clue which instrumental or roentgenographic examinations sometimes fail to disclose.

To enumerate all of the problems which confront the dentist who undertakes the rehabilitation of the partially edentulous patient would be difficult in the short time available. Many changes occur when teeth are lost unless steps are taken immediately to restore or replace them.

Although the objectives of prosthetic dentistry are primarily biological in character, the aims are attainable largely through the application of the basic laws of mechanics and engineering. The concept that restorative dentistry is a procedure based solely upon an understanding and application of mechanical processes is just as untenable as the view which holds that it is entirely biological.

When a single rooted tooth is subjected to a vertical force, it is found that the tooth is depressed toward the fundus of the alveolar socket in a direction parallel to its long axis. When this occurs, most of the periodontal fibres are subjected to tensile stress. Since alveolar bone responds most favorably to tension, it may be safely stated that a force parallel to the long axis of the tooth is the most favorable direction in which a tooth may be moved. Since the law of nature is "response to demand" and since it is found that the bulk of the periodontal fibres is of the oblique group which primarily resists a vertical force, it is evident that nature has responded to the physical demands by the biological design of its periodontal membrane.

With the aid of roentgenographs it is possible to determine whether the periodontal membrane is relatively thick or thin. Such a determination may indicate whether the tooth is in function or not. By studying the relative thickness of the periodontal membrane of the abutment tooth and comparing it with others in the mouth, one may also determine whether a local traumatic condition exists. A functioning tooth usually has a thicker periodontal membrane than one out of function. As a rule, an abutment tooth having its periodontal membrane attached two-thirds its normal length may be safely used for a bridge support. Those teeth which have one-half or less of the normal length of attachment have not proven satisfactory.

Teeth in function usually have periodontal membranes which can endure the additional load of a fixed bridge, whereas those teeth out of function usually have a thin periodontal membrane and alveolar process; also their supporting bone contains large marrow spaces. This may explain the tenderness and soreness which sometimes follows the placing of a fixed bridge on abutments which were not in function and whose supporting tissues were not structurally or physiologically normal. If, however the form and the function of the new bridge are correct, in time a functional tolerance will be established both in the membrane and in the supporting bone.

Another type of force, the diagonal, is directed sidewise against a part of the peripheral surface of the tooth and is directed obliquely against the long axis of the tooth. Whenever horizontal components of force are present, the tooth is

tipped in its alveolar socket. In such cases the fulcrum is not located at the root end, but is situated at a point somewhere between the apical and the middle third of the clinical root. When a tooth is subjected to diagonal force, the periodontal membrane area consists of two general regions, one part lying apically from the fulcrum, the other gingivally from it.

When the force is applied from the buccal region, it is observed that the buccal region of the marginal area is in tension; while on the lingual surface opposite to the buccal area the periodontal fibres are under compression. Similarly, it will be observed that from the fulcrum apically the fibres on the buccal surface are compressed, while those on the lingual are tensed. Examination of a histological section of the periodontal membrane in these areas shows that it is narrower in the fulcrum region, whereas it widens out apically and gingivally.

It is well to remember that, while the fulcrum of a tooth is in the apical half of the root, it is located closer to its middle part than the apex of the root.

In two-rooted teeth, when a diagonal force is applied mesiodistally, the point of rotation does not lie in either root, but is situated in the inter-radicular alveolar bone at a point midway between the crest and the base of the bone. If occlusal force is applied in such a way that a tooth is forced distally, the distal root is depressed and the mesial is raised in its socket.

While it is true that bone responds more favorably to tension than it does to compression, it is likewise true that bone has some capacity of resisting and sustaining compressive force. The reaction of bone to force is dependent upon the degree of its application. If it is slight and intermittent, no resorption of bone occurs. If it is more intense and sustained, it is quite likely that a certain amount of resorption will occur; whereas, if the amount of force is excessive and sustained, it may result in an acute resorption or may even terminate in areas of necrosis and loss of function.

The alveolar process exists only by virtue of the presence and function of the tooth. There is no alveolar process before the eruption of teeth nor any after all the teeth have been lost. The alveolar process is the tooth supporting portion of the mandible and the maxillae. When a tooth is extracted the process is resorbed.

A thorough understanding of the character and function of the alveolar process is extremely important to successful bridge prosthesis. These processes supporting teeth in the mandible and the maxillae completely surround the root and normally extend to within two or three millimeters of the dentino-enamel junction. A tooth whose alveolar process has been reduced or resorbed more than one-half of its original height is rarely suitable for a bridge abutment.

In normal cases favorable for fixed partial denture service the trabeculae of the cancellous bone between the cortical and cribriform plates are uniform, both in their size and distribution and thus can withstand the forces of occlusion. In teeth out of function it will be found that the supporting bone is very sparse, the arrangement of the trabeculae is irregular, and the spaces large. The clinical significance of the two types of alveolar process becomes apparent when it is remembered that the placing of a fixed partial denture on teeth that have been out of function for many years, submits such abutments to an increased load which may be far beyond the capacity of their endurance. Where the roentgenographs and case history reveal the existence of such impaired alveolar structure, a temporary type of fixed partial denture should be made to give reduced function, thus submitting the abutment teeth to a partial load.

The stimulation resulting from such a partial function will tend to develop new trabeculae, oriented to meet the new forces; it will be found that the existing trabeculae will also improve. The very large marrow spaces underlying nonfunctioning teeth will gradually diminish until eventually the supporting bone is so rebuilt that it can conveniently withstand and transmit normal masticatory forces

to the cortical plate. Concommitant with this change in bone from a nonfunctioning to a functioning tooth, changes may also be observed in the periodontal membrane. The nonfunctioning tooth has a typically narrow periodontal membrane; with restored function it changes into one that is normal and wider.

The normal mucosa over a ridge is firm and unyielding; it is attached to the underlying bone by a dense fibrous tissue. There is another type of mucosa which is flabby and pendulous and sometimes requires surgical assistance in order to reduce it to a normal, firm condition. While the mucosa over the ridge is relatively immovable, that toward the border tissues is very mobile. Clinically it is important to determine the line or plane at which the mobile tissue connects with the immovable ridge tissue; also whether this transitional area is in a high, medium or low position. The clinical importance of this observation lies in the fact that a pontic is generally confined within the area of the immovable mucosa of the ridge, for whenever the gingival outline of the pontic extends far beyond and into the border tissues, irritation and inflammation result.

Dentine and the pulp are among the most specialized connective tissues in the human body; they also are among the most sensitive in their response to stimulation. When affected by thermal, mechanical or other stimuli, the pulp has the power of laying down secondary dentine. This is a biologic protection which nature employs to safeguard the vitality of the pulp and prevent its exposure. The stimulation may be mild, moderate or severe.

Certain factors influence the quality of pulpal response. One is the distance of the filling from the pulp. The closer the distance, the greater is the likelihood of the response to thermal and chemical irritation. Because the age of the patient is closely related to the size of the pulp, it is evident that a bridge retainer which is acceptable for the mature patient may be contra indicated in the adolescent due to the proximity of the pulp. In preparing teeth for retainers, the extent and depth of the cavity must be constantly related not only to the requirements of mechanical retention but also to the age and the probable biologic responses of the pulp.

The method used to cut enamel and dentine and the rapidity of accomplishing this procedure has received much attention during the past few years. I recall that in my student-day training in the preparation of cavities that there was major emphasis on the use of hand cutting instruments in obtaining flat, smooth walls and sharp angles. Spoon excavators were indicated for the removal of carious tooth structure. Undermined enamel was removed along lines of enamel cleavage with chisels and enamel hatchets. The development of digital and manual dexterity was centered on correct cavity outline and retention; emphasis was placed on the conservation of the vitality and health of the pulp.

Round burs were primarily utilized to gain access to dentine through occlusal pits; inverted cone burs were used to undermine enamel to facilitate its removal with chisels or enamel hatchets. The straight sided and tapering burs had their use in fissure extension and cavity outline. The final finish of the cavity was accomplished with sharp hand instruments, sometimes supplemented by mounted, fine Arkansas stone points. In this technic the direction of the enamel rods on different areas of the tooth had an important bearing on the ultimate integrity of an enamel margin. The application of such knowledge in cavity preparation left no unsupported enamel rods along cavo-surface margins which might be broken off later. It also told the dentist when and where to bevel cavo-surface margins and at what angle.

Because the preparation of a tooth is a meticulous procedure it takes time.

Recently the tendency has been to accelerate the procedure. The advent of the diamond stones is a move in this direction followed by greater speeds of cutting. This increased rapidity of cutting brought with it certain dangers to the pulp due

to the increased heat created. The use of the water spray helps to eliminate this danger. However, in almost every instance after the bulk removal of the enamel and dentine, it is still necessary to finish the preparation with burs and hand instruments. The frenzy for accelerating the rapidity of cutting has jumped the speed of motors from 3000 rpm to 6, 12, 20 thousand; and more recently to one and two hundred thousand rpm. Although it is true that the cutting efficiency of a stone increases with increased speed, speeds of 12,000 to 20,000 rpm are a satisfactory maximum range. At the university, speeds of 6000 rpm are used up to the senior year. Thereafter, speeds of 12,000 meet all our requirements. I doubt whether speeds in excess of 20,000 are needed in any dental school. In addition, present day contra angles are not able to endure such sustained speeds.

We shall not go into a detailed discussion of the other newer developments for cutting teeth, namely the air brasive and cavitron technics, except to cite certain observations and experiences. The use of the air brasive in the laboratory and at the chair was entirely inadequate for preparing crowns and bridge retainers. The factors of time consumed, visibility of field, control of the cutting and expense involved have not justified its acceptance. There are, however, certain uses for this method in the simpler types of individual fillings.

The cavitron is the more recent development in this direction. We have been working with this technic for about two years. Our interest in this technic as with the air brasive was its adaptability and efficiency in the field of crown and bridge prosthodontics. We have had the advice and experience of the inventors of the cavitron and the dentist who first presented the method to the profession. Different sizes and shapes of cutting points have been graciously furnished by the manufacturer for our use and experiments at the university. Staff members and post graduate students have worked with it and evaluated both its merits and shortcomings.

In its present state of development it serves the purpose well, quickly and almost painlessly for certain simple fillings, such as occlusal and gingival cavities. The prepared walls are smooth and flat and the angles sharp. For the intracoronal types of cavities, the proximal and occlusal cuts are made rapidly and with comfort to the patient. However, it is invariably necessary to complete the preparation with burs and hand instruments. The cavitron discloses its shortcomings when subjected to the test of preparing teeth for ¾ retainers or complete crowns. True, these can be and have been prepared, but at the cost of excessive chair time. This technic also requires final finishing with burs and hand instruments. As an ancillary technic for the preliminary removal of bulk tooth structure, the cavitron may have its use in crown and bridge prosthodontics. Whether the cost of the equipment is justified by the increased efficiency resulting from its use in the dental office must be decided by the individual dentist.

There is a couplet which reads: "Be not the first by whom the new is tried, nor yet the last to lay the old aside." While this may be sound advice generally, it should not govern the attitude of a teaching institution, where new ideas and new methods should be received and tried with an open mind and evaluated and reported objectively. This we have tried to do. The biologic reactions to high speed, air brasive and cavitron technics are being studied and reported by several investigators. The ideal method of tooth tissue disintegration and removal in cavity preparation, without pain, may be the next accomplishment in the field of electronics.

The irritation of the dentinal fibrils and the odontoblasts caused by abrasion or decay is gradual, and enables the odontoblasts and their protoplasmic extensions to react favorably to protect themselves by laying down secondary dentine. This phenomenon has a direct

bearing on the cavity preparation of a bridge retainer. Because the pulp chambers are large in youth and because there is a lack of secondary dentine formation, the extra-coronal types of preparations are indicated in order not to encroach upon the pulp. In older patients with secondary dentine present, it is relatively safe to use the intra-coronal types of preparations.

Where the dentine is exposed by caries, it has been shown that the dentinal tubuli are penetrated by the bacteria but that nature sets up a protective barrier against their too rapid advance through the dentinal tubuli. The cavity should be extended into sound or sclerosed dentine.

When sound dentine is freshly exposed with burs or stones during preparation for inlays or crowns, the exposure of dentine with its associated shock is so sudden and intense that before the odontoblasts are able to lay down protective layers of secondary dentine, the pulp may become involved. This is especially true if the naked dentine is left unprotected and exposed to the oral fluids for any length of time.

The concept is sometimes disregarded, when cutting and exposing sound healthy dentine, that we are dealing with a vital tissue susceptible to infection. How can prepared teeth be best protected and what materials are best suited for this purpose? Studies have been made on the effects that different filling materials have on the pulp when utilized to protect a prepared tooth.

It has been found that although gutta-percha is a chemically inert material and non irritating, the heat necessary to place it without pressure may affect the pulp. Likewise, subsequent masticatory pressure causes the pulp to become extremely sensitive by the next appointment.

The zinc and copper cements cause a more severe pulpal reaction, resulting sometimes in pulpal abscesses. Zinc oxide-eugenol cement alleviates any discomfort caused by operative procedures and prevents the prepared tooth from becoming extremely sensitive at the subsequent sitting. Temporary protective fillings or crowns are always cemented with zinc oxide-eugenol cement. The rubber dam should be used if a large amount of dentine is to be cut and exposed for any length of time.

The dentine in a pulpless tooth apparently is more brittle than in one with a vital pulp; such a tooth splits very easily. On pulpless bicuspid and molar abutment preparations, it is essential to include the occlusal surfaces of the buccal and lingual cusps. On the upper teeth a veneer extending to the greatest lingual convexity covers the entire lingual cusp, preventing its fracture; on the lower bicuspids and molars the veneer is likewise extended, but it is placed on the buccal surface, covering the buccal cusps.

Bridges are frequently indicated for patients whose teeth have moved, leaving wide interdental spaces. A difficult situation may be reduced to simplicity if orthodontic aid is obtained prior to the construction of the bridge. The extraction of a lower first molar if not immediately replaced by a prosthetic appliance will cause a lingual drifting and mesial tipping of the second and third molars. This becomes progressively worse until a time comes when only the distal cusps of the lower molars are in occlusal contact with the upper teeth. To place a fixed appliance on a tooth having such an angle of inclination will subject it to unusual stresses. It is wise to reposition such teeth to as near their normal alignment as possible by orthodontic procedures before placing a bridge. Where teeth incline slightly toward each other, roentgenographic analyses should be made to determine the axes of the preparations.

The difference between physiologic and pathologic tissue reactions is due not so much to the amount of the force as (1) to the type and degree of tissue reaction, and (2) to the ability of the tissues to accommodate themselves to their new environment. If a force is normal, it acts as a desirable stimulant to the tissues; if it is abnormal, it may become an acute or a chronic irritation.

Normally the application of proper force is essential to the well-being of the tissues. However, the presence of abnormal forces may react differently in two individuals. In one having the vital capacity for adjustment, there will be no breakdown of tissues; in the other not possessing the powers of compensation and adaptability, breakdown of the tissues may result.

The normal denture maintains its equilibrium and state of health only so long as it remains in a state of dynamic balance. The presence of all of the natural teeth or their properly constructed substitutes is one of the important factors in maintaining this balance; the opposing, occlusal, inclined surfaces must be properly interrelated. Where this condition does not exist, the function and health of the dental tissues are proportionately impaired.

During the adolescent period, where permanent teeth are replacing the deciduous, the premature loss of a deciduous tooth sometimes results in the anterior movement of those permanent teeth which lie posterior to the extracted deciduous tooth.

For a bridge retainer to be acceptable mechanically, the abutment must be so prepared that adequate support and retention are provided against displacing forces. Any cavity design which requires cutting more tooth structure than is necessary for adequate retention and prevention of caries should not be used.

The ideal abutment tooth is one which contains a vital pulp. It must not be inferred from this, however, that a treated tooth with a properly filled root canal is not usable as a bridge abutment; clinical evidence indicates that in properly selected cases such treated teeth have rendered years of valuable service to the patient with no harmful effects. Nevertheless, the first requisite in preparing any tooth for the reception of a bridge retainer is pulp conservation. Every effort should be made during cutting operations to avoid over-heating or irritating the pulp. An abutment tooth must have sufficient bulk left to withstand the variety of forces to which the bridge will subject it.

An abutment tooth sustains stresses of a type and magnitude to which the unattached tooth is not subjected. The type and amount of periodontal membrane attachment should be determined separately for each abutment tooth; likewise the depth of the gingival crevice.

Before accepting a tooth as an abutment, its degree of calcification should be determined; enamel that is not properly calcified will not furnish a dense wall for finishing the margins of the casting. Some teeth contain opalescent dentine; these are questionable as bridge abutments; they can, however, carry individual crowns.

A tooth sometimes egresses beyond its normal occlusal plane and to use it as a bridge abutment, it is necessary to reduce its occlusal portion. The amount of such vertical egression may vary from 1 mm. to the point where the tooth touches the mucosa of the opposite ridge. When the egression of a tooth exceeds one-fourth its normal coronal height, its use as an abutment usually requires pulp removal. Where the necessary amount of reduction can be made without encroaching upon the pulp, the same physical handicaps usually prevail as in the severely-abraded tooth. Such an egressed tooth is further handicapped biologically since it does not have a periodontal membrane of normal functional width; neither does it possess a supporting bone of normal structure. Such teeth are of questionable value as bridge abutments.

Occasionally the possibility arises of using a tooth with a resected or a fractured root as an abutment. While such a condition curtails the probable life of a bridge, at times such a procedure is justified.

The ideal retainer can be made and retained without injury to the pulp or the investing tissues during the lifetime of the restoration. Retainers which involve the least number of surfaces, the least amount of tooth cutting and mutilation of

tooth contour, are more desirable than are those more extensive in these respects.

The type of retainer selected for a specific case depends upon several factors. The mouth hygiene habits or the habitual diet of the patient may contra-indicate the use of the intracoronal types which have long marginal lines; the complete veneer crown is preferable under such conditions. Distinction should also be made between those patients who are immune to caries and those actively susceptable to it. A study of various types of bridge retainers shows substantial differences in the length of their cavo-surface margins.

The amount of force which patients are capable of exerting on fixed partial dentures varies with the age and sex of the patient. The periodontal membrane of the abutment tooth determines the limit of stress which a bridge can sustain; the length of the bridge and the structural design also determine the type of retainers used.

Although a retainer is part of a mechanical structure replacing lost teeth, it is also intimately related to vital tissues; it is the medium through which mechanical and physical forces are translated into physiologic functions with biologic reactions in living tissues.

Many crowns and bridges, perfect from a mechanical standpoint, have been lost because of insufficient or improper protection to the investing tissues. Because a tooth contacts its adjoining teeth and it is difficult to pass a ligature through its contact points, is no assurance that either the form or the position of the contacts are correct. Sometimes we see a crowned tooth which is rotated labially or lingually due to the improper positioning of its contact points. Likewise, teeth have either been raised or lowered in the arch due to the improper gingivo-occlusal positioning of the contacts.

Fixed bridges should be so constructed that they are largely self-cleansing; their form and relationship to the soft tissues such, that the patient can keep the appliance in a sanitary condition by the judicious use of the tooth brush and ligature. There are times when this care may be supplemented by the use of a small water syringe. No prosthetic service may be considered complete until the dentist has given the patient full instructions and training in the proper method of maintaining a hygienic oral condition. Furthermore, it is the duty of the dentist to check periodically to see whether the patient is following these instructions properly; if not, the patient should be helped to overcome his shortcomings in order to secure the desired mouth hygiene.

Many a well-restored mouth has failed either because the dentist neglected to in-

MM.	*MM.*
MO 4/ 29.4	MOD 6/ 45.4
DL 1/ 24.4	MOD 5/ 35
	MLD 3/ 34

MM.	*MM.*
3/4 Cr. 7/ 37.8	Compl. Cr. 7/ 27.6
„ „ 6/ 38.6	7 | 29.4
„ „ 4/ 24	
3/ 35.6	
3/ 25.2	

MM.	*MM.*
MO 4/ 29.4	MOD 6/ 45.4
MOD 5/ 35	3/4 7/ 37.8
DIFF.	DIFF.
MOD & MO - 5.6 mm.	7.6 mm.

MO 4/ 29.4
CR. 7/ 29.4

DIFF.
7/ 3/4 & Cr. 7/
37.8 - 27.6 - 10.2 m.m.
6/ MOD & Cr. 7/
45.4 - 27.6 - 17.8 m.m.

struct his patient in its proper care or because the patient failed to comply with the instructions given to him by the dentist. Too much emphasis, therefore, cannot be placed in stressing these facts to the patient, otherwise decay will occur.

Since the retention of an inlay and its resistance to displacement are primarily mechanical problems, some of the factors involved may be properly considered at this time. A grasp of the principles of retention in bridge retainers is based on an understanding of the forces of mastication and an analysis of the stresses which are developed in the abutments and restorations.

Let us consider first those forces applied vertically to the teeth. It is known that "when a force is applied at right angles to a surface, its effectiveness is in the direction of the force, and that it is proportional to its magnitudes and the opposing forces are equal and opposite in direction." "If the force is applied at an angle to a surface other than at a right angle, it is resolved into two forces, one of which acts in its effectiveness at right angles to the surface, the magnitudes of which depend upon the angle of application and the reacting force is neither equal nor opposite in direction."

The stresses resulting from vertical forces have an important bearing on the retention of the inlay; this bears on the relationship of the buccal and lingual walls of the proximal preparation. The question arises whether they should flare axioproximally or parallel each other, at least those parts of the wall lying within the dentine.

In a horizontal cross-section of a class two cavity slightly above the gingival wall, the walls prepared in dentine are parallel, while those in enamel diverge outwardly. It must be kept in mind that these cavities also flare gingivocclusally and, therefore, may be considered as sections of an elastic tapering keyway into which fits a cast-metal tapering key.

Another method of resisting displacement is the proper preparation of the gingival wall and the occlusal dovetail.

In addition to the increased mechanical retention resulting from slight modifications of cavity preparations, it is essential that suitable gold alloys be used and that castings made of such alloys be properly heat-treated in order that their miximum physical properties are utilized. It is conceivable that, even with a correctly prepared cavity and an accurately fitting casting, failure may result if the retainer does not possess the necessary tensile strength, hardness, and other qualities necessary for it to withstand the forces and stresses of daily use.

When a retainer is part of a fixed partial denture and is united to another more-or-less distantly located retainer by means of an intervening rigid piece of metal, it is subjected to new forces. Individual teeth are capable of movement in three directions: buccolingually, distomesially, and vertically. When two teeth are united rigidly, the forces of mastication create new movements and stresses; unless recognized and provided for, they may cause the loosening and failure of the most skillfully constructed fixed bridge.

When two abutment teeth are rigidly united by means of a fixed bridge and forces are applied to the structure, new movements and stresses develop in the bridge and in the supporting tissues.

Let us conclude with the thought that while the fixed bridge is a mechanical structure, it is also a therapeutic appliance which transmutes mechanical and physical forces into physiological functions and biological reactions.

Mastering a Science — No one can be really master of any science unless he studies its special history, which again is bound up with the general history of humanity.
A. Comte.

Acquired Unilateral Condylar Hypertrophy

STUART GORDON, M.D., F.R.C.S.*, ALBERT ANTONI, D.D.S., M.Sc.D.**, and R. E. BOOKER, D.D.S.***

A case report

Unilateral enlargement of the mandibular condyle is a comparatively rare entity. Two of the authors (S.G. and A.A.) have each seen two such cases.

The aetiology of these benign overgrowths is obscure and somewhat controversial. The fact that a single bone and only one aspect of that bone is involved would tend to rule out any systemic aetiologic factor.

The clinical course appears to be fairly constant and this case about to be reported is no exception. The patient was an unmarried, registered nurse, age 23 years. For several years she had noticed an increasing asymmetry of her face, and a decreasing occlusal efficiency on the right side. Pain was a latent symptom, and even then was occasional in frequency. There was some clicking of the right temporo-mandibular joint. The patient stated that she remembered falling and injuring the right side of her face in her childhood.

Recently she presented to Dr. Noble Hori, a private practitioner in Dentistry in this city, for routine dental care. Dr. Hori was disturbed by the abnormal mandibular and occlusal patterns and suggested that she be examined by us.

An examination was subsequently made in this hospital (Toronto General Hospital), at which time study models and all pertinent radiographic surveys were studied. The latter revealed a bony mass 2 by 3 cms. in continuity with the right mandibular condyloid process. Figs. 2 (a), (b) & (c). The radiological report was as follows:

MANDIBLE AND TEMPORO-MANDIBULAR JOINTS:

"Anteroposterior and lateral views of the temporo-mandibular joints as well as laminagrams of the right temporo-mandibular joint were made.

"There is evidence of old growth of the right half of the mandible including the condyloid and coronoid processes. The mandibular fossa of the right temporal bone is enlarged accordingly. The anteroposterior view shows the medial aspect of the head of the condylar process of the mandible on the right side to extend medially and to be quite roughened and irregular. The basal view shows the increase in size of the ramus, coronoid and condyloid processes of the mandible.

"The anteroposterior view shows the length of the right half of the mandible to be considerably greater than that of the left. The oblique view shows the size of the body of the right side of the mandible to be much greater than that of the

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FIGURE 1A

Full face pre-operative photograph showing asymmetry of the face and deviation of the chin to the left side.

left and to be generally demineralized suggesting that it is non-functioning.

"Summary: There is evidence of overgrowth of the right half of the mandible including the condylar process, the ramus and the body. There is demineralization of the bone on the right half of the body of the mandible."

It was evident that no amount of occlusal correction would overcome the marked degree of facial and dental deformity, and it was agreed that a condylectomy on the right side, plus immobilization was the procedure of choice. Admission arrangements were made for 2 June 1956, and pre-operative photographs were taken in the Department of Medical Photography, T.G.H.

Admission Examination

The patient is a well developed, well nourished white female, age 23 years, exhibiting obvious facial asymmetry with rotation and prominence of the mandible to the left side. Figs. 1 (a) & (b). There is full range of movement of the mandible, with some deviation to the left side. There is no evidence of lymphadenopathy. Her teeth are in good repair. There is an open bite in the molar region on the right side, and a cross-bite on the left side. (See fig. 1 (c).

Further Examination as follows:

Chest:	clear
B.P.	130/70
Pulse:	74/min. Regular.
Abdomen:	Clear; appendectomy scar.
Urine:	Specific Gravity: 1.021 Reaction: alkaline Albumen: negative Sugar: negative

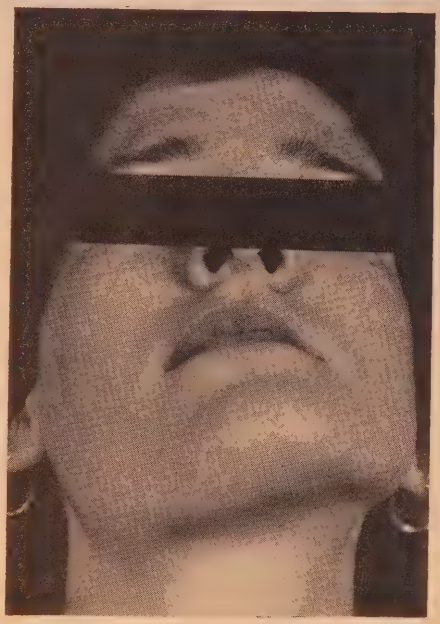

FIGURE 1B

Another pre-operative photograph to show marked facial asymmetry. Note apparent elongation of the right ramus of the mandible.

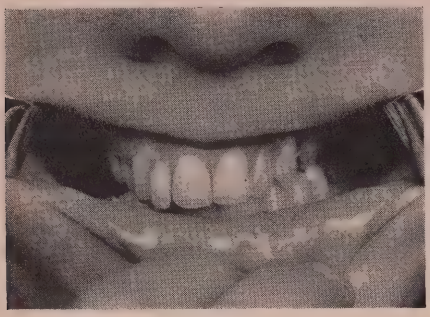

FIGURE 1C

Preoperative photograph showing marked mal-occlusion. Note complete lack of occlusal contact on the right side and the cross-bite on the left side.

Blood: Haemoglobin and cell counts within normal limits.

PRE-OPERATIVE ORDERS

Erythromycin 500 mgm. every 6 hours for four days.
Pantopon gr.1/3 at 8.00 a.m. on 4 June, 1956.
Hyoscine gr.1/200 " " " "
To P.O.R. at 9.00 a.m. on 4 June, 1956.

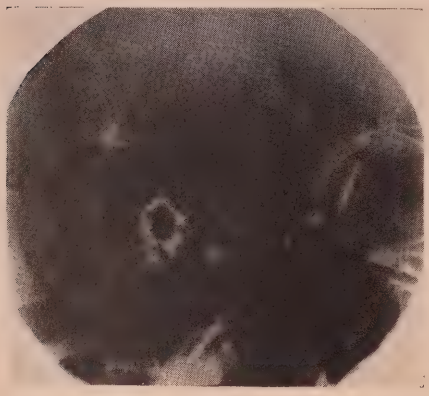

FIGURE 2A

Pre-operative radiograph showing the normal condyle (in open position) on the left side.

OPERATION REPORT

The patient was inducted with Sodium Penthothal, and an endotracheal tube was passed through the left nostril. The right temporal region was shaved and the right ear, face and neck were prepared with Cetavlon. Sterile drapes were applied in the usual manner.

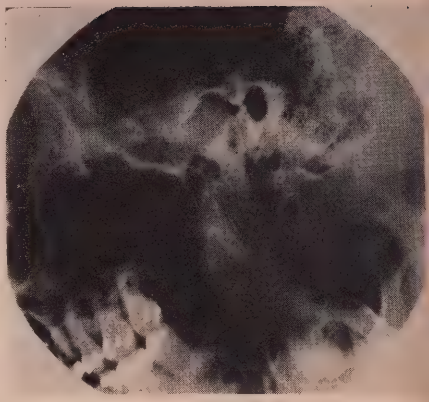

FIGURE 2B

Pre-operative radiogram of the right condylar area. Note abnormally large condylar mass.

A two inch vertical incision was made about one quarter of an inch anterior to the tragus of the right ear, the mid-point of the incision being directly over the zygomatic arch. Dissection was carried down through the skin and fascia to finally expose the right condyle. Haemostasis was effected by the use of a local anaesthetic containing a vasoconstrictor and by tying off all bleeders with 000 catgut.

The neck of the condyle was cut across just above the mandibular notch, and the hyperplastic condylar head was delivered through the wound. (Fig. 2 c).

The defect was packed lightly with gelfoam and the wound was closed with 000 catgut for the deep layers and 00000 black silk for the skin. Whitehead's varnish was painted along the suture line and a gauze pressure bandage applied.

Risdon arch wires were applied to the teeth of both jaws following the above first stage. The lower right second molar was removed to permit alignment of the mandible into the most beneficial occlu-

FIGURE 2C

Photograph showing resected right condyle, which was specimen submitted to Pathology Laboratory.

FIGURE 3A

Full face photograph taken postoperatively to show the improved facial symmetry.

sion. Immobilization was then achieved by means of intermaxillary wires.

The patient was returned to the recovery room in good condition and was well recovered from the anaesthetic when returned to her room.

Post-operatively the patient's course was uneventful. She experienced some nausea and very slight vomiting during the first twenty-four hours, but these were not severe enough to cause us to release the intermaxillary wires. She took liquids through a glass sipper and frequent feeding were encouraged. Pain was controlled with demerol, 50 mgm. every four hours as required. Oedema was within expected limits, and there was no sign of facial nerve involvement. The patient was discharged on June 8, 1956 to be followed in the out-patient dental clinic.

The jaws were kept immobilized until June 15th at which time the intermaxillary wires were removed. The Risdon arches were left in place for another week. This is our routine procedure in anticipation of possibly having to reinstitute immobilization should progress not be satisfactory.

COMMENT: The patient now has a normal temporo-mandibular joint on the left side, and a false joint on the right side. The false joint is supported in part by the fibrous tissues which have filled the surgically created defect, and in part by the masseter muscle, the coronoid head of the temporal muscle, and the medial pterygoid muscle.

FIGURE 3B

Photograph taken four weeks post-operatively and one week after the intermaxillary wires had been removed. Note improved occlusion on the right and the correction of the cross-bite on the left side.

There is an adequate range of mandibular movement. Continued function and exercise will result in further improvement. During the next few months particular attention will be paid to the finer degrees of occlusal equilibration. The improvement in aesthetics and occlusal efficiency has been most gratifying. Fig. 3 (a) & (b).

SUMMARY: This case demonstrates an idiopathic unilateral condylar hypertrophy which resulted in facial and occlusal deformity. Both the corrective surgical technique and post-operative care have been outlined.

Toronto General Hospital

Removal and Replantation in a Psychoneurotic Patient

J. B. HYAMS, D.D.S., Montreal, Quebec

A young female in her mid-twenties presented herself for treatment of an upper right first bicuspid. She was fearful about dental operations and mentioned she was under psychiatric care. Consultation with her psychiatrist divulged an anxiety neurosis for which she was under treatment. He felt that the tooth must be saved at all costs, and with as little trauma as possible.

Examination of the tooth revealed a restoration of amalgam, distal and occlusal. The tooth had been restored six years ago and had begun troubling the patient about five weeks previously. There was nocturnal pain with sharp nerve lancinations spreading across the side of her face. Contact with hot or cold foods precipitated severe pain. There was slight tenderness on percussion.

Radiographic examination (Fig. 1) revealed a deeply placed amalgam restoration. There was no periapical pathology apparent. A diagnosis of degenerative pulpitis was arrived at. Three courses of treatment were available: partial pulpectomy, total pulpectomy or removal of the tooth and subsequent replacement by bridgework.

Partial pulpectomy might or might not have been successful. The prognosis was questionable. Total pulpectomy required cooperation beyond the tolerance of the patient. Mention of loss of the tooth precipitated a feeling of dread which was pathetic to behold. In consultation with

FIGURE 1

FIGURE 2

FIGURE 3

the psychiatrist, it was decided that extra-oral extirpation of the pulp followed by an attempt at replantation was the most desirable course of action for this disturbed patient.

An intramuscular injection of 600,000 units of dipenicillin G Dibenzylethylenediamine was administered followed by subcutaneous Demerol hydrochloride 100 mgs., Scopolamine .6 mgs. Local anaesthesia was obtained with Xylocaine 2%, epinephrine 1:50,000.

The tooth was removed as atraumatically as possible. (Fig. 2). A sponge was placed over the alveolus and the patient encouraged to bite upon it. The tooth was wrapped in sterile gauze, and the crown entered occlusally to the pulp chamber. Its contents were removed and the root canals were reamed and filed and irrigated with zonite and hydrogen peroxide. The canals were dried and filled with Kerr's Sealer followed by gutta percha points. Excess at the apices was removed. Fig. 3 is a radiograph of the tooth prior to replantation.

The tooth cavity was filled with amalgam. The roots were irrigated with procaine penicillin and re-introduced into the blood clot in the alveolus and the patient was told to clench her teeth. A surgical sponge was placed between her teeth after the tooth was in its proper pre-extraction position. The patient applied pressure for twenty minutes. The patient was instructed to apply an ice bag, ½ hour on, ½ hour off and food was to be kept away from the area. A.P.C.e C gr. ss. was prescribed for pain. Fig. 4 shows the area after replantation.

The following day the patient reported slight facial swelling and mild pain but "nothing like the previous shooting agony". Two days later the patient was seen. Facial oedema was gone and the gingival condition looked very good. There was inflammation about the gingival margins of the tooth, and it felt slightly high when the patient closed. The surface of the restoration was gently reduced. There was moderate mobility.

The patient was called one month later and reported that dentally speaking all was well. She was chewing in the area. Fig. 5 is a radiograph of the case one year later.

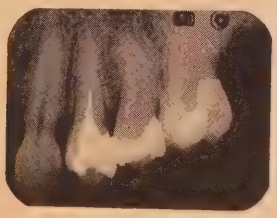

FIGURE 4

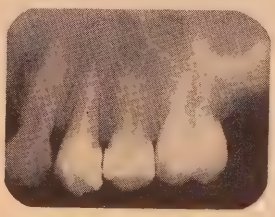

FIGURE 5

Succinylcholine as an Adjunct to General Anaesthesia in the Dental Office*

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Introduction

Muscle relaxants, while relatively new drugs in the field of anaesthesia, have already found a wide range of usefulness. Succinylcholine, a muscle relaxant, has been used extensively as an aid to general surgery, obstetrics, manipulation and the administration of anaesthesia. In dental operations, it has been used mainly to facilitate endotracheal intubation and overcome laryngospasm. Its use for ambulatory oral surgery patients has not been evaluated. The following clinical study proposes to investigate the range of usefulness of succinylcholine, whether or not it presents hazards in addition to those anaesthesia itself presents, and its indications and contra-indications, all in their specific application to the dental office.

A. Review of Literature

A few decades ago general anaesthesia was a hazardous procedure from the patient's standpoint. To produce the desired state of anaesthesia, it was often necessary to administer such dosages of the anaesthetic agents as to severely alter normal physiological function. A muscular relaxant, in company with a lighter plane of anaesthesia, was the solution to this problem.

In 1942, Griffith[1] introduced curare to anaesthesiology. This was an important date in the history of anaesthesia, for there was a drug which produced muscle relaxation without depression of the central nervous system by blockage of the impulses at the myoneural junction.

Thirty-one years earlier, in 1911, Hunt and Taveau[2] had reported on the pharmacological properties of choline and some of its derivatives including succinylcholine. But in their preoccupation with the effect upon the cardiovascular system, they missed the muscular relaxation elicited by the action of succinylcholine.

The first report on succinylcholine as a muscle relaxant was published by Bovet[3] in 1949, after an investigation of a number of synthetic curarizing agents. A year later Castillo and DeBeer[4] reported on the neuromuscular blocking action of succinylcholine. Little, et al,[5] in 1953 published their findings concerning the clinical applications of succinylcholine. To facilitate endotracheal intubation and to provide prolonged and continuous muscular relaxation for such diverse purposes as peritoneal relaxation for abdominal closure, sphincter relaxation during hemorrhoidectomy, muscle relaxation for the manipulation and reduction of fractures,

* Submitted to the Graduate School of the University of Pittsburgh in partial fulfillment of the requirements for the degree of Master of Science.

(1) H. R. Griffith and G. E. Johnson, "The Use of Curare in General Anesthesia," **Journal of Anesthesiology**, 3:428-440 (July, 1942).

(2) R. Hunt and R. Taveau, "The Effect of a Number of Derivatives of Choline and Analogous Compounds on the Blood Pressure," **Public Health and Marine Service, U.S.A. Hyg. Lab. Bull.**, 73:136 (1911).

(3) D. Bovet, "Investigations on Synthetic Curarizine Drugs," **Rend. 1st Super. Sanita (Rome)**, 12:81, 106 (1949).

(4) J. C. Castillo and E. J. DeBeer, "The Neuromuscular Blocking Action of Succinylcholine," **Journal Pharmacol. and Exp. Therap.**, 99:458 (1950).

(5) D. M. Little, et al, "Succinylcholine: A Controllable Muscle Relaxant," **Current Research in Anesthesia and Analgesia**, 32: 171-180 (May-June, 1953).

perineal relaxation during operative vaginal delivery in obstetrics, and glottic relaxation to combat severe laryngospasm, they employed the drug in more than 500 anaesthetic administrations. The ideal muscle relaxant, they found, should possess the following properties: brevity of action yet prolonged relaxation where required, non-interference with normal metabolic processes, and rapid metabolization in the body into innocuous degradation products. Succinylcholine, of all the muscle relaxants available, came closest to this ideal in their opinion.

B. Pharmacology

Succinylcholine is ultra short-acting (relaxation usually lasts about two minutes) in comparison with other muscle relaxants. Its action is produced by blockage of nerve impulses at the myoneural junction which causes relaxation and paralysis of skeletal muscles. Its pharmacological action depends on the strategic location of two quaternary nitrogen atoms in a large molecule. It is classified with the depolarizing muscle relaxants. The contraction of a muscle is activated by a nerve response which causes the deposition of acetylcholine at the motor end-plate, which in turn stimulates the muscle to action. Since the acetylcholine is hydrolyzed by plasma cholinesterase, action of the motor end-plate is very brief. Depolarizing agents compete with acetylcholine for the receptor sites at the motor end-plate and, having a greater affinity for the receptor sites, block out the acetylcholine and thus prevent muscle movement.

The compound is the dicholine ester of succinic acid. It is a white, crystalline water-soluble salt, rapidly hydrolyzed in alkaline solutions. In a 0.2% solution it is, however, compatible with thiopental sodium. The extremely brief duration of action is accounted for by its rapid hydrolyzation in the body by a non-specific plasma enzyme, cholinesterase. It is broken down into succinic acid and choline, both of which are normal metabolites and believed to be harmless. Substances which inhibit cholinesterase (neostigmine), or which compete for the enzyme (procaine) are contra-indicated with succinylcholine, and prolong its action. Diseases such as liver damage and malnutrition will decrease the amount of body cholinesterase, and may, therefore, contra-indicate the use of succinylcholine.

Its action is remarkably specific; even large doses have no direct effect upon the heart or central nervous system. Clinical doses do not affect transmission in the autonomic nervous system.

Controllability is the outstanding feature of succinylcholine-induced relaxation. Intravenous injections of a single dose will usually give, within half- to one minute, complete relaxation of all skeletal muscles. The relaxation usually lasts about two minutes and is followed by rapid recovery of muscle tone. Single injections are used when brief relaxation is required, their administration being timed according to the operator's convenience. Whenever relaxation of the voluntary muscles is required for more than a few minutes, an infusion technique is used. Because it affords a means of greater control of the degree of muscular relaxation, this is the method applicable to dental operations.

Reports of the occurrence of undesirable side effects of succinylcholine are lacking. Clinical use at the University of Pittsburgh Health Center has indicated, however, that they are few. At the same institution, there have been cases of unusually prolonged response to the action of the drug. But as yet no conclusive explanation has been offered for this side-effect.

Succinylcholine is marketed in the United States under the names "Anectine," B. W. & Co., and "Quelicin," Abbott.

C. Importance of Problem

General anaesthesia for dental operations has always presented problems. The use of inhalant agents alone is often time-consuming and fraught with uncontrol-

lable movement on the part of the patient. Moreover, the maintenance of the desired level of anaesthesia in prolonged procedures is difficult or impossible. The introduction of intravenous anaesthetic agents has eliminated the stormy induction and facilitated the maintenance of the desired level of anaesthesia. But it has also introduced additional problems, such as prolonged post-operative depression, which is of vital importance in the dental office, and the serious danger of laryngospasm.

The ideal anaesthetic for dental operations would possess the following properties: a rapid, smooth and pleasant induction, an ease of maintenance of the desired level of anaesthesia for prolonged procedures, adequate muscular relaxation for a controlled period and a rapid emergence of the patient into his normal self. Clearly, availability of a drug or drugs which aid in the elimination of undesirable sequelae, without producing others, is of tremendous advantage to the dentist practicing ambulatory anaesthesia.

The muscle relaxants which are now available, principally D-tubocurarine, Flaxadil and succinylcholine, seem to provide this advantage. All have a similar effect upon skeletal muscle. But only succinylcholine because of its ultra short action, is of use in the dental office.

Method and Material

This study was conducted during dental operations performed on 103 ambulatory patients, with the same anaesthetic agents being used in each case. Since the majority of operations took place in several oral surgery offices, as well as the out-patient department of Presbyterian Hospital, Pittsburgh, it was impossible to select patients.

The first 52 procedures utilized succinylcholine as an adjunct to the general anaesthetic. The other 51 patients who did not receive succinylcholine were used as a control group. Since the use of succinylcholine is not restricted to any age group or sex and since time is not a factor, this study accordingly was not restricted to these considerations. Age distribution ranged from 15 to 60 years. Procedure time was similarly varied—from five minutes to 50 minutes.

Thiopental sodium in a 2% solution, was used in combination with N_2O-O_2 and trichlorethylene in order to approach more nearly the ideal general anaesthetic for dental operations. To facilitate a rapid emergence from the anaesthetic thiopental sodium was used wherever possible for induction purposes, while the inhalants were utilized as maintenance agents. Succinylcholine was administered in a 0.2% solution, with the use of intravenous continuous drip. The dosage of all agents varied according to the needs of the individual patient. An attempt was made to regulate the dosage of succinylcholine whereby relaxation of skeletal muscles would be such as to evidence a minimal degree of respiratory depression. In all cases, an attempt was made to carry the patient in a very light plane of anaesthesia. Where greater relaxation was required, an increase in the rate of infusion of succinylcholine was instigated.

Vital signs of anaesthesia, blood pressure and pulse, were closely followed and recorded throughout each anaesthetic by the experimenter. A record was also kept of the degree of movement by the patient and was classified as to its ability to interfere with the operation. Movement which involved only the extremities was classified as slight. That which involved both the extremities and the body, but still would not interfere with the operation was considered as moderate, and that which was sufficient to interfere with the operation was termed severe. Also listed were any untoward reactions during the recovery period.

For comparison purposes a record was kept of the length of anaesthetic and recovery periods. This is important to the ambulatory case in that it is felt that the recovery period should as nearly as possible approximate the length of the anaesthetic. The anaesthetic commences with the venapuncture and ends with termination of the operation, while the recovery

period commences with the termination of the anaesthetic and ends when the patient is ready to leave the office.

Procedures ranged from single tooth extractions to full mouth extractions utilizing endotracheal intubation. Intubation was not attempted, however, on any of the control group, since a muscle relaxing agent is a prerequisite to this anaesthetic technique.

To deliver the inhalation agents, a McKesson Nargraf anaesthesia machine, equipped with nasal inhaler, was used in all cases. One venapuncture was utilized for the administration of both thiopental sodium and succinylcholine. The control group received a solution of 5% dextrose in water in place of succinylcholine. Emergency measures were available at all times during the procedure so that resuscitation could be rapidly and efficiently performed.

All patients were in a dental chair, with the chair tilted slightly back to facilitate the maintenance of an adequate airway. A nurse was available at all times.

As soon as the venapuncture had been made a test dose (10 gmg) of thiopental sodium was administered to check for any idiosyncrasies or allergic manifestations to the drug. At the conclusion of ten or 15 seconds, if no untoward reactions had been noted, the administration of thiopental sodium was continued until the patient was no longer in harmony with his surroundings and the lid reflex sluggish or abolished. The nasal inhaler was then placed on the face and N_2O-O_2 and trichlorethylene administered. Succinylcholine was not instituted until the patient was at the level of anaesthesia at which the operation could commence. An attempt was made to carry all patients in the stage of anaesthesia known as chemanesia which entails a depression of the cerebral cortex and a partial depression of the midbrain. In this stage a patient will be amnesic, but may have uncoordinated movement.

At the completion of the operation, the anaesthetic was terminated and oxygen therapy provided until the patient was able to react to verbal commands. As soon as he was capable of standing and walking with assistance, the patient was moved to a recovery room where he remained until he was again in harmony with his surroundings and exhibiting a satisfactory degree of muscle co-ordination to enable him to leave the office.

In every procedure where succinylcholine was utilized, a constant observation of the respiratory pattern of the patient was necessary to detect signs of respiratory depression due to the action of the drug. Where respiratory depression was detected, augmentation was instituted to increase the volume of oxygen to the body tissues.

Results

In the 103 cases used for the evaluation of succinylcholine as an adjunct to general anaesthesia all patients underwent a rapid, smooth induction. There were no cases of untoward reactions to thiopental sodium on administration of a test dose. The dosage necessary for induction varied according to the individual needs of each patient. The administration of the inhalation agents also varied with individual needs. Where succinylcholine was utilized it was found that 2-3 mg. per minute would usually produce relaxation without respiratory depression, but again, this dosage varied according to need.

Of the 52 cases where succinylcholine was utilized it was necessary in ten cases to administer additional dosages of thiopental sodium during the procedure to maintain the level of anaesthesia necessary for continuance of the operation. All of these cases exceeded ten minutes in duration. In the control group, there were 31 cases which required additional thiopental sodium during the procedure. Ten of these were of duration not exceeding ten minutes.

Of the degrees of movement recorded during each operation, only that which was classified "severe" was sufficient to interfere with the operation. In the succinylcholine group, no movement was re-

corded in 13 cases, 28 showed slight movement, 9, moderate and there were 2 cases of severe movement. In the control group, four cases showed no movement, 11 slight, 10 moderate, and 26 severe. The four patients who did not evidence movement all underwent procedures of less than five minutes.

In comparison to the anaesthetic time, the average recovery period for the succinylcholine group was of nine minutes longer duration, whereas the average recovery period for each patient in the control group exceeded the anaesthetic time by almost 12 minutes.

Thirty-nine of the succinylcholine group experienced an uneventful recovery, eight had varying degrees of post-operative nausea and three complained of a slight degree of muscular weakness for only a short period. There were 38 uneventful recoveries to the control group, 13 experienced nausea and none complained of post-operative weakness.

In both control and experimental groups, there was no significant alteration in blood pressure or pulse recorded.

Table I, which follows, shows a comparison of the degree of movement recorded for the two groups. Table II compares the number of cases requiring additional pentothal after induction for both groups.

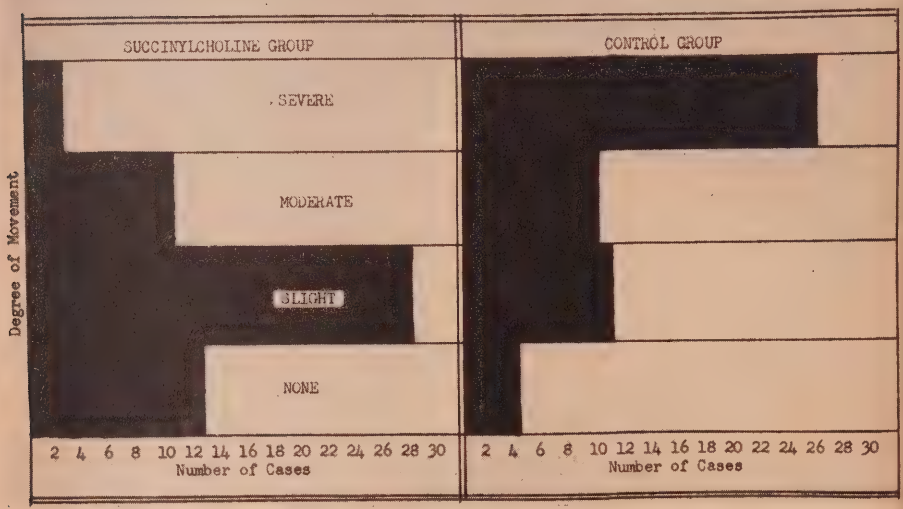
IV. Discussion of Results

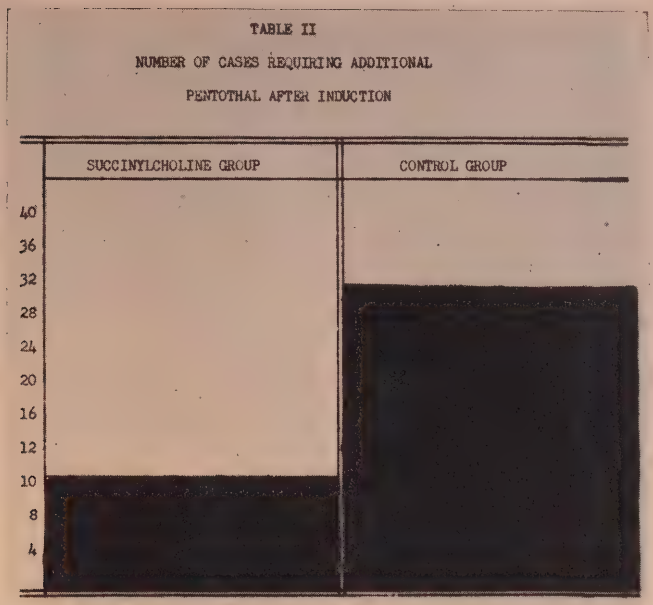
From the evidence of 31 cases in the control group which required additional pentothal, as compared with ten in the succinylcholine group, it can be concluded that where succinylcholine is an adjunct to the general anaesthetic, maintenance of the anaesthetic with nitrous oxide oxygen and trylene—a closer approach to the ideal anaesthetic technique in the dental office—is permitted.

Twenty-six cases in the control group demonstrated movement severe enough to

TABLE I

DEGREE OF MOVEMENT RECORDED





interfere with the operation, while only two cases were as severe in the succinylcholine group. The utilization of succinylcholine, then, provides an additional advantage in improved working conditions that is apparent to anaesthesiologist and operator alike.

The decreased use of pentothal throughout the operation would account for the shortened recovery period for the succinylcholine group. This shortened recovery period is of particular advantage to the management of a busy dental practice.

Where succinylcholine is utilized in sufficient dosages to allow for the desired degree of muscular relaxation, there will usually be found some degree of respiratory depression. This undesirable effect must demand the constant attention of the anaesthetist so that compensatory measures may be taken.

From the records of the recovery period it would appear that succinylcholine does not present untoward reactions in addition to those usually encountered where a general anaesthetic is administered. The two cases of post-operative weakness cannot be definitely attributed to succinylcholine in that they could have been caused by the pre-operative fasting period.

V. Summary

From the preceding clinical study, it may be concluded that muscle relaxants, particularly the short-acting succinylcholine, have a definite place in office anaesthesia. It is important to realize, however, that succinylcholine is *not* an anaesthetic agent but rather an adjunct for muscular relaxation.

Succinylcholine demands the absolute and undivided attention of the anaesthesiologist at all times. It is essential, then, that only trained anaesthesia personnel employ the muscle relaxants. These drugs

should never be employed, moreover, unless all necessary equipment to oxygenate the patient is available and usable.

The foregoing study has demonstrated, however, the advantages which utilization of succinylcholine, as an adjunct to general anaesthesia, affords the dental profession: it more clearly approaches the ideal anaesthetic than general anaesthesia alone; thereby providing a more advantageous procedure to operator and patient alike.

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Globulo-Maxillary Cysts

GEORGE A. MORGAN, D.D.S., Toronto, Ontario
and F. M. ROULSTON, D.D.S., Sudbury, Ontario.

Globulo-maxillary cysts are a fissural type of epithelial lined cyst which occurs between the globular and the maxillary processes on either side of the maxilla between the roots of the lateral incisor and cuspid teeth. Its lining is derived from epithelium that is enclaved in the fusion of the globular portion of the medial nasal process with the maxillary process. It may be lined by either respiratory epithelium or the oral type (stratified squamous), depending on the potentiality of the residual cells.

Globulo-maxillary cysts are relatively rare and they may remain unrecognized until they have become so extensive in size that they have destroyed sufficient bone about the apex of adjoining teeth to make it difficult to distinguish them from the periodontal (radicular) type of cyst.

In differential diagnosis a roentgenographical aid is the separation or spreading of the roots of the maxillary lateral incisor and cuspid teeth brought about as a result of lateral pressure from the growing cyst. Globulo-maxillary cysts often extend well down between the roots of the maxillary lateral and cuspid teeth, frequently to involve the alveolar crest. Clinically the maxillary lateral and cuspid will respond normally to vitality testing and frequently a labial bulging of bone will be observed.

When a globulo-maxillary cyst is removed it is generally not necessary to sacrifice the adjacent teeth.

Thoma believes that there is a hereditary aetiological factor in this type of cyst and reports a case which occurred in a mother and later a similar one became evident in her daughter. The rarity of this type of cyst makes it likely that this occurrence was not a coincidence.

The development of this type of cyst may be related in some measure to incomplete closure of the globular and maxillary processes and may be analogous to the formation of cleft palate and harelip, a condition in which there is also a familial tendency.

One Case Is Presented

White male, age 16. First seen by one of us (F. M. Roulston) and referred for surgery. Case as illustrated is that of a globulo-maxillary cyst situated in the right globular maxillary fissure. The maxillary right lateral and cuspid tooth responded normally to vitality. There was some slight bulging of the labial bone in the area.

Roentgenographically as illustrated a cystic cavity was observed between the lateral incisor and cuspid teeth. There was some spreading of the adjacent two teeth and the cyst extended upwards between the apices and downward between the roots to the alveolar ridge.

GLOBULO-MAXILLARY CYST

The cyst was removed from the labial without removal of the adjacent teeth.

Pathological sectioning reported a cyst lined with stratified squamous epithelium.

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15th Australian Dental Congress

The 15th Australian Dental Congress will be held in Adelaide, South Australia, from 23rd to 27th February, 1959. The following Officers have been appointed to Congress Executive:

M. S. Joyner.....President-Elect
R. S. Blackburn.....Vice-President
P. M. Wesslink.....Vice-President
B. W. Leach.....Treasurer
M. J. Barrett.....Secretary

Committees have already been appointed to arrange the lecture programme, table demonstrations, television clinics and film programme.

Congress is open to members of the Australian Dental Association and to members of accredited dental societies of other countries. Those seeking further information should write to the Secretary 15th Australian Dental Congress, 51 Grenfell Street, Adelaide, South Australia.

The Canadian Society of Dentistry for Children

At the Banff meeting of the Board of Governors, in June, 1956, the Canadian Society of Dentistry for Children was admitted as a section of the Canadian Dental Association. It is, therefore, timely that the nature, purpose and intentions of this new section be discussed.

The Canadian Society of Dentistry for children is not a specialist group, which is unique among the sections of the Canadian Dental Association. It is made up of over two hundred dentists, mostly from Southern Ontario, and all but seven are in general practice. The constitution states that "The purpose of this Society shall be the advancement of knowledge of all phases of dentistry for children and the dissemination of this knowledge to the profession and the public". However, since the Society was organized seven years ago, its principle efforts have been devoted to producing an attractive annual program. These programs have featured speakers on the basic sciences, preventive dentistry, paediatrics and various clinical procedures of particular value to younger patients. This policy has proven to be increasingly popular and verifies the appreciation of the place of dentistry for children in general practice.

Plans for the future include extending program assistance to convention and program committees, providing prizes for proficiency in Paedodontics in Canadian dental faculties, encouragement of local societies of dentistry for children in centres across Canada. These objectives take on added significance even when it is noted that the Charter for Health Insurance of the Canadian Dental Association places special importance on this field in meeting the dental health requirements of the Canadian people.

The constitution of the Society, as approved by the Board of Governors, was worded so that existing groups devoted to dentistry for children can become components without losing their present identity. It is hoped that new groups will organize and also become components of the Society. It is expected that two interesting changes will occur as new groups become federated. First, the Society will become a more effective national movement that can speak with unity and authority on dentistry for children. This is of importance in public relations and in legislative matters. Second, the original unit will become the Ontario section of the Canadian Society of Dentistry for Children.

BRITISH COLUMBIA DENTAL ASSOCIATION

CONVENTION

Empress Hotel, Victoria, May 16-18, 1957

Address enquiries to:

Dr. W. Ross Upton, Executive Secretary,
217 Medical-Dental Building,
Vancouver, B.C.

ABSTRACTS

Family Dental Costs and Other Personal Health Services: A Nationwide Survey

ODIN W. ANDERSON, Ph.D. New York.

A nationwide survey in the United States has revealed that only one of every three persons had consulted a dentist during the year. The average annual charges for dental services were $33 per family and $10 per individual. This study of dental services was part of a survey conducted during the summer of 1953 by the National Opinion Research Centre, University of Chicago. The survey sought to determine the distribution of costs of all personal health services among families, the extent of voluntary health insurance and the degree to which such insurance was helping to spread the cost of services, and also to encourage the continuing growth of insurance.

Insurance benefits to pay for hospital care and in-hospital physicians' services are reasonably easy to administer because the demand for such services is relatively self-limiting and predictable, so that costs can be anticipated and insurance premiums realistically determined.

Dental services are also relatively self-limiting in that the need for dental care can be determined quite objectively. The public demand for dental insurance, however, has not been pressing and dentists themselves are proceeding cautiously—as well they might.

The charges per family and per individual for different types of health services are included with the dental charges in Table 1.

TABLE 1 — Costs per family and per individual for health services.

Type of service	Charges per family	Charges per individual
All services	$207	$65
Dentists	33	10
Physicians	78	25
Hospitals	41	13
Medicines	31	10
Other	26	8

Table 2 indicates that dental services are an exception to the general rule that the costs of personal health services increase with age.

TABLE 2 — Dental costs by age groups.

Age	Dental charges per person	Dental charges per person with charges
All persons ...	$10	$32
0 — 5 years .	1	16
6 — 17	11	25
18 — 34	13	31
35 — 54	14	37
55 — 64	13	53
65 and over ...	4	37

A sudden decrease in dental costs among those 65 years of age and over is of interest, since an increasing need for dentures and related services which are relatively expensive would be expected. Women incur greater charges for dental services than men in a year—$12 and $9, respectively. Among those who incur dental charges, the average charge during a year is $32, but the charge rises with age until age 65 and over. Apparently, if there is any extensive dental repair it usually is completed before age 65.

The Journal of the American Dental Assoc. Vol. 54. No. 1. January 1957.

Trauma as Factor Causing Delayed Repair of Dental Extraction Site

CHARLES C. ALLING, D.D.S., M.S., and DONALD A. KERR, D.D.S., M.S.

One of the ever present problems facing the dentist who extracts teeth is the complication characterized by failure of repair of the alveolus and persistent attendant pain. The condition is commonly referred to as "dry socket". Because of the frequency with which this condition occurs, there has been much interest in the problem and many suggestions as to its cause. One of us has observed that the teeth's having a gross amount of periodontal membrane adherent after extraction predisposes to the development of alveolar osteitis. It has also been observed that extensive and vigorous use of elevators during dental extraction results in a high incidence of dry sockets. It therefore seemed logical that if trauma at the time of extraction destroyed or severely damaged the periodontal membrane, organization of the blood clot would not occur, the alveolar bone would lose its blood supply and become necrotic and healing would be delayed.

The preceding observations and rationalization initiated this study. Monkeys were selected as the experimental animal because of the close similarity of their dentition to the human dentition.

The lower right first molars of 25 monkeys were extracted by forceps technic. The corresponding left first mandibular molars were extracted with straight elevators and the alveolus burnished with a blunt instrument to destroy the periodontal membrane. The animals were sacrificed at 1, 7, 14, or 21 days after extraction.

The control side and the traumatized side were compared clinically at the time of sacrifice to determine the delay in healing. Histologic studies also were made of both control and traumatized sockets to compare the rate of healing. Clinically there was no evidence in delay of healing in any of the control sockets. Clinical examination of the traumatized sockets showed no delay in healing in 4 animals, moderate delay in healing in 14 animals and pronounced delay in healing in 7 animals.

Microscopic examination of the control sockets demonstrated an intact blood clot being organized for the residual periodon-

tal membrane. Microscopic examination of the traumatized sockets revealed varying degrees of failure of organization of the clot. The degree was proportional to the absence of periodontal membrane.

Traumatized sockets demonstrated intense subacute osteitis surrounding the alveoli. This was absent in the control animals.

Burnishing of the alveolus produces destruction of the periodontal membrane. Delay of healing in dental sockets is correlated with the amount of periodontal membrane residual after extraction. The absence of periodontal membrane prevents organization of the blood clot, which sloughs out, permitting the invasion of organisms and the entrapment of debris. This condition plus the attendant trauma of the alveolar bone results in an osteitis responsible for the pain and delay of healing, which is a characteristic clinical observation in dry socket.
socket.

A.D.A. Journal of Oral Surgery, Vol. 15, No. 1. January 1957.

Recognition of Mandibular Joint Symptoms and Treatment of Their Sources

JAMES B. COSTEN

Temporomandibular joint problems fall into three general categories: those in which occlusal restoration relieves pain symptoms permanently, those receiving direct treatment of the joint, and those whose symptoms simulate origins about the joint, for which no treatment of any kind is indicated.

It is axiomatic that occlusal restoration should be achieved before, or after all efforts directed to the joint itself, such as surgical removal of meniscus or portions of the condyle.

The newest treatment to be used in joints of the body, weight-bearing, fixed or movable, is intra-articular injection of hydrocortisone. Its use in the temporomandibular joint is feasible during, or after, dental reconstruction, with excellent results. It is of great practical value and still classified as a palliative measure; no adverse reactions have been noted in any case.

Contraction of masticator muscles occurs during years of abnormal jaw action. After surgery on the temporomandibular joint, re-education of the masticator muscle group may be done by: (1) Voluntary myotonic exercises (Seaver); (2) external elastic splinting to produce leverage within the jaws, or (3 intra-oral spring applications for forcible opening of the jaw.

The number of cases of masseter tremor is relatively small, as compared with the enormous group of mandibular joint neuralgias treated successfully. However, as would be expected, no restoration of occlusion has been of value in any case where masseter tremor is present. If masseter tremor is observed, the prognosis after any treatment of joint or jaw position is unequivocally poor.

Annals of Dentistry, December 1956, Vol. XV, No. 4.

C.D.A.—W.C.D.S. CONVENTION

Royal Alexandra Hotel — Winnipeg, Manitoba

HISTORICAL LANDMARK — WINNIPEG
Main entrance gate to Upper Fort Garry at the confluence of the Red and Assiniboine Rivers.

Here is the news of the Special Event we promised you in the January issue of the Journal:

The Winnipeg dentists and their wives cordially invite all the visiting conventioners to the National meeting to their homes for dinner and an evening of true "Western Hospitality."

This social event is a *first* for the C.D.A.—W.C.D.S. Convention. It will provide an excellent opportunity for dentists and their wives from all parts of Canada to meet and become better acquainted with each other.

The Ladies' Committee, in charge of this event, has spared no effort to make it an occasion that will be long remembered.

The March issue will contain the Convention Supplement and in April we shall have the details of another event of more than usual interest.

Plan to be with us in Winnipeg, June 23rd — 26th.

EDITORIAL

Tax Relief on Approved Pension Plans

Of interest to Canadian dentists is the knowledge that the 1956 Finance Act in the United Kingdom contains legislation permitting, with certain qualifications, the self-employed to obtain relief from taxation on moneys paid for the provision of retirement income. Self-employed persons in Canada enjoy no such concessions.

In 1954, a committee under the chairmanship of Sir Millard Tucker, presented a report on the tax treatment of provisions for retirement. The committee studied the existing legislation pertinent to superannuation funds and other arrangements for provision of a pension on retirement or death. Many recommendations were made in order that such schemes could be extended to the self-employed person who, at that time, was legally unable to participate in such plans. This report became known as the Millard Tucker Report No. 2 and the government adopted the most important of its recommendations. This recommendation was contained in the Budget address of the Chancellor of the Exchequer and stated in part that persons practising or trading on their own account in their profession or business, would enjoy certain fiscal rights in respect of providing for their retirement although they would not receive benefit to the extent of that provided for employees and others who under the existing legislation may belong to approved pension schemes from which the self-employed and others are excluded.

Since mid way in the nineteenth century provision has been made in the tax law of the United Kingdom for retirement. During World I some industrial organizations introduced certain funded group pension plans for their employees and as an outgrowth of such schemes the Finance Act of 1921 contained recommendations of the 1920 Royal Commission on the Income Tax. Special rules for the tax treatment of approved pension funds were developed. The effect of establishing an approved fund was that both the employer's and the employee's contributions were exempt from tax.

During World War II there was an even greater expansion in pension fund schemes. Almost one-third of the employees in the United Kingdom belonged to pension plans in existence by 1947. By the close of this war there was further agitation for legislation. The essence of the new law was that no scheme would receive approval unless the main benefit provided by it was a pension for the life of the employee.

The Millard Tucker Committee while concerning itself with the entire tax field was required to consider whether the membership of the existing approved schemes should be extended to all persons holding an office or employment, and

more especially to those individuals carrying on a profession or business who were excluded from membership of schemes approved under the 1921 and 1947 Acts.

The 1956 Finance Act now provides that self-employed persons and controlling directors will be given full relief from tax on premiums contributed for purposes of ensuring an annuity upon retirement, at any time after the sixtieth birthday. There is no limit on the actual amount which may be paid out of income in order to obtain such an annuity but relief from tax will be given only on certain determined amounts which, if one is born subsequent to 1915 is the lesser of £750 or 10% of net relevant earnings or, if born prior to 1907 the lesser of £1,125 or 15% of net relevant earnings. For ages between these limits the scale varies on a proportional basis.

While there are other modifications and regulations, essentially the principle is as stated above. Such annuities under this plan are not capable of assignment either in whole or in part, neither is there any right of commutation or surrender of the annuity.

In Canada, assiduous effort by the self-employed has not yet brought about legislation similar to that in existence in the United Kingdom. The Canadian Dental Association both independently and in concert with such organizations as the Canadian Medical Association, the Canadian Bar Association, and the Canadian Institute of Chartered Accountants, has made vigorous attempts to obtain such legislation. A recent article in *The Financial Post* gives cause for some optimism that the government may concede professionals and other self-employers, those exemptions on retirement scheme contributions. Because it is believed that current regulations discriminate against the self employed and that similar treatment to company employees would be only a measure of fiscal justice; because the legislation in the United Kingdom has established a workable precedent; because in an election year some tax concessions are inevitable; and because participation in such schemes by the self-employed would encourage saving rather than spending—an important consideration in these days of monetary restraint—there is some likelihood that definite progress will be made in 1957.

The self-employed will listen with more than usual interest to this year's Budget address by the Minister of Finance.

CORRESPONDENCE

Dear Mr. Editor.

I should like to make some comment concerning an article in the last November issue of The Journal of the Canadian Dental Association by Dr. H. R. MacLean on Radiation Hazards in Dentistry. I wish first to thank Dr. MacLean for his excellent, timely presentation. To quote Time's current article about Carl-Gustav Rossby, world famous meteorologist, in the concluding paragraph; "Each year the atmosphere is more polluted by man's air-borne refuse. Man's atomic operations have already increased the earth's radioactivity. Rossby watches all this with growing misgivings." Judging by the expressed opinions of many other scientists, Rossby is not alone in his misgivings. In one paragraph Dr. MacLean says, "So far the use of intensifying screens has been considered impractical in the dental X-ray field." This may be so, admittedly, it is difficult; but it is possible to screen out certain areas by the intervention of metallic coverings, e.g. a lead lined collar over the neck to protect the thyroid and parathyroid

glands which are very susceptible to injury from radiation. Metallized cloth could also be used in some cases to shield parts of the head, the inclusion of which are not required in the image to be made. It would be difficult to shield the pituitary gland when rays are directed from below through the occlusal plane, but in every case we should, wherever possible, limit the exposure to the smallest possible field, consistent with good technique.

Back in 1950 Albert G. Richards (Univ. of Michigan) in an article "X-Ray Protection in Dentistry", J. Oral Surg. 8:323-327, October spoke about the necessity of providing built in protection of the walls of a room containing X-ray apparatus to protect people who might be in the paths of the X-rays during exposures. I wonder how many office buildings are so protected? In view of the probable increased hazards to the population with increased usage of atomic energy, it will be the duty of radiologists to exercise every ounce of prevention possible, so as not to add the straw that broke the camel's back.

Sincerely Yours,
J. D. Reddin,
Mt. Stewart, P.E.I.

BOOK REVIEW

Pharmacology and Oral Therapeutics, 11th Ed.—Prepared by: Edward C. Dobbs, B.S., D.D.S., F.A.C.F. Published by: C. V. Mosby Co. Pages: 555 with illustrations. Price: $9.00.

The essentials of Pharmacology as related to Dentistry is the subject of this concise book by Dr. Dobbs. The author, by reason of his extensive dental background has been able to insert the peculiar dental implications when dealing with the many phases of Pharmacology that his book covers. An example of this is his reference to the dietary needs of patients with jaw fractures and the oral manifestations of vitamin deficiencies.

It is of value to the dentist as a reference book in which many drugs are listed and a capsule of information given about each. For more detailed information about certain aspects of drug therapy, it will be necessary to consult one of the standard texts on Pharmacology.

However, the trade names of many of the drugs used daily in the dental office are inserted under the general category into which the drug falls. In the case of new local anaesthetics and vasoconstrictors a useful assessment of their activities in relation to their accepted counterparts has been made.

The chapter on chemotherapy and antibiotics has been brought up to date. A number of undesirable side effects of streptomycin, aureomycin, chloromycetin and terramycin have been noted which only became evident after lengthy clinical trial. The reader is supplied with a short comment on each antibiotic as well as a description of the many different forms in which it may be dispensed.

The last chapter entitled Dental and Oral Therapeutics contains some interesting dental remedies in addition to many useful prescriptions. The author has included in this chapter the information which is presently available concerning the effectiveness of a number of dentifrices.

This text should prove to be a very useful one for dental hygienists as well as dental students and practitioners.

J. F. Methven.

THE ASSOCIATION

Memorandum Respecting Income Tax Returns by Members of The Dental Profession

As a matter of guidance to the dental profession and to bring about a greater uniformity in the data to be furnished to the Taxation Division of the Department of National Revenue in the annual Income Tax Returns to be filed, the following matters are set out.

Income

1. There should be maintained by every member of the dental profession an accurate record of income received, both as fees from his profession and by way of investment income. The record should be clear and capable of being readily checked against the return filed. Records should be maintained in books kept for the purpose which should be retained until written permission for their disposal is obtained from the Minister of National Revenue.

Expenses

2. Under the heading of expenses the following accounts should be maintained and records kept available for checking purposes in support of charges made:—

(a) Dental and like supplies;

(b) Office help, nurse, and book-keeper, laundry and malpractice insurance premiums. (It is to be noted that the Income Tax Act does not allow as a deduction a salary paid by a husband to a wife or vice versa. Such amount, if paid, is to be added back to the income);

(c) Telephone expenses incurred in connection with professional practice.

(d) Assistants' fees.
The names and addresses of the assistants to whom fees are paid should be furnished on or before the last day of February in each year on Income Tax Form known as Form T.4, obtainable from your District Income Tax Office. (Do not confuse with individual return of income, Form T.1, to be filed on or before April in each year);

(e) Rentals paid;
The name and addresses of the owner (preferably) or agent of the rented premises should be furnished. (see (g));

(f) Postage and stationery;

(g) Proportional expenses of dentists practising from their residence —

(a) Owned by the dentist;
Where a dentist practices from a house he owns and as well resides in, a proportionate allowance of house expenses will be given for the study, laboratory, office and waiting room space, on the basis that this space bears to the total space of the residence. The charges cover taxes, light, heat, insurance, repairs, and interest on mortgage. (Name and address of mortgagee to be stated). Note: For depreciation see item 2. (m).

(b) rented by the dentist;
The rent will be apportioned and heat and light if paid by the dentist; the owner of the premises takes care of all other expenses mentioned in (a) above.

The above allowance will not exceed one-third of the total house expenses or rental unless it can be shown that a greater allowance should be made for professional purposes.

(h) Sundry expenses (not otherwise classified);
The expenses charged to this account should be capable of analysis and supported by records.
Claims for donations paid to charitable organizations will be allowed up to 10 percent of the net income from all sources upon submission of receipts to your District Income Tax Office. This is provided for in the Act.

The annual dues paid to governing bodies under which authority to practise is issued and membership association fees, to be recorded on the return, will be admitted as a charge.
The cost of attending post-graduate courses will not be allowed.

(i) Carrying charges;
The charges for interest paid on money borrowed against securities pledged as collateral security may only

be charged against the income from investments and not against professional income.

(j) Business tax will be allowed as an expense but income taxes will not be allowed.

(k) Automobile expenses;

Taxi fares and automobile expenses incurred in earning the income from the dental practice will be allowed when the dentist must visit his patients at their homes. The cost of transportation between the dentist's home and his office, however, is not an allowable deduction from income.

(l) Convention Expenses:

Under legislation enacted in 1956, applicable to 1955 and subsequent years, a taxpayer may deduct in the computation of his income, expenses incurred by him in attending, in connection with a business or profession carried on by him, not more than two conventions held during the year by a business or professional organization.

To substantiate claims for convention expenses a taxpayer should show in a statement filed with his income tax return:

(1) the dates of the Convention;
(2) the number of days he was present, supported by a certificate of attendance or other suitable evidence from the sponsoring organization, and
(3) the expenses segregating (a) transportation expenses; (b) meals, and (c) hotel expenses, for which last, at least, vouchers should be obtained and kept available for inspection.

None of the above expenses are allowable against salary income since such deductions are prohibited by Section 5 of the Income Tax Act.

(m) Depreciation;

A description of the treatment of depreciation may be found on page four of the Income Tax Return form T.1 General under the Part XI Method.

The method of computing depreciation for tax purposes is the same as that used last year and you should have no difficulty if you have a copy of last year's return available.

Simply carry forward the balance remaining in each class after deducting last year's allowance. Add to this figure the cost of any new equipment purchased and deduct the proceeds from any disposal of property in each class. The rate you wish to use not exceeding the maximum rate (see below) is applied to this new balance for each class to obtain the depreciation you may claim this year.

The schedule on page four of the Income Tax Return is reproduced:—

SCHEDULE

(1) Class Number	(2) Undepreciated Capital Cost at Beginning of 1956 (Col 10 of 1955 return)	(3) Cost of Additions During 1956	(4) Proceeds From Disposals During 1956

(5) Undepreciated Capital Cost Before 1956 Allowance (Col. 2 plus 3, less 4)	(6) Rate %	(7) Capital Cost Allowance for 1956	(8) Undepreciated Capital Cost at End of 1956 (Col. 5 Less Col. 7)

The maximum rates for classes of equipment most used by dentists follow:—

Assets	Class	Maximum Rate
Dental Equipment including instruments each costing $50.00 or more	8	20%
Instruments costing less than $50.00	12	100%
Office Furniture and Fixture	8	20%
Frame Building (office or residence used both as dwelling and office)	6	10%
Brick Building (office or residence used both as dwelling and office)	3	5%

Instruments costing less than $50.00 each belong in class 12 and have a maximum allowance rate of 100%. They should not be included in expenses but should be recorded as additions in column 3 of the schedule.

Where a dentist practices from a house which he owns and resides in, the allowance may be claimed as above on a portion of the cost of the residence, excluding land. For example if the residence were a brick building costing $12,000.00 and one-third of the space were used for the office, the dentist would use $4,000.00

as the business portion of the cost and apply the building rate of 5% to determine the maximum depreciation allowable in the first year.

For further information on the subject you may refer to the Regulations or you may consult your District Income Tax Office.

Payment of Tax

3. Payment of Tax. Individuals whose income is more than 25% derived from sources other than salary or wages are required to pay the tax for each year by quarterly instalments during such year on the following dates, 31st March, 30th June, 30th September and 31st December.

Dentists Under Salary Contract

4. The Income Tax Act provides for the deduction of certain expenses from salary income.

The allowable expenses include travelling expenses, annual professional membership dues, office rent, salary to an assistant or substitute and supplies consumed directly in the performance of the duties of employment.

Certain conditions are attached to the allowance of the expenses and without trying to recite the exact provisions of the law the main points are:—

(a) That the expenses must have been incurred in the performance of the duties of the office or employment.

(b) That the employee is required under the contract of employment to pay the expenses.

(c) To claim travelling expenses the employee must be ordinarily required to carry on the duties of his employment away from his employer's place of business. Travelling between the dentist's home and his office is not included.

Income From a Partnership

5. Additional expenses incurred by a partner, but not charged to the partnership; may be claimed as a deduction from the partner's share of income. However, the partner must be in a position to substantiate these expenses, to show why they were not charged to the partnership and that they were necessarily laid out to earn the partnership income.

The Library

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

EUROPEAN ORTHODONTIC SOCIETY: Report of the thirtieth congress. 1954. 366p. illus.

HARVOLD, E.: A roentgen study of the postnatal morphogenesis of the facial skeleton in cleft palate. 1954. 102p. illus.

KARLSTROM, S.: The pontostructor method for the construction of fixed bridges, crowns and inlays. 1955. 266p. illus.

SIMON, W. J.: Clinical operative dentistry. 1956. 381p. illus.

VADEMECUM International Pharmaceutical specialties and biologicals. 1957.

ECONOMIC SECURITY

Your Home

E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.(S), Consulting Economist

PART E:

THE SOCIAL ASPECTS OF HOME OWNERSHIP

A number of the practical, personal reasons why home ownership is desirable, and some of the means by which satisfaction can be secured, have been discussed in the articles of this series. It seems desirable to conclude by at least a glance at some of the larger aspects of home-ownership which, if not so immediately apparent, are not less real.

The chief service of history is, by showing the results of certain actions or situations in the past, to guide us in the present in order to secure a desired result in the future. Historically, those nations contributing most to human progress have been those in which the great majority have been free, independent, small landholders. There is no evidence tending to suggest that the occupants of "low-rent housing projects" will possess greater intellectual vigour and independence of thought and action than the sturdy freeholder of the past.

It is not without significance that those societies which today subordinate the individual to the state are those which try to herd their citizenry, industrial and agricultural, into "collectives". The greater the dependence of the individual upon others for his habitation, the greater will be his loss of independence of thought and action.

Increasing population pressure and the tendency of industry to increase the size and complexity of the production unit, make much of the concentration of the population in rented quarters difficult to avoid, but it seems not an overstatement to say that the maintenance in Canada of a vigorous society with free institutions will depend in no small measure upon the existence of a strong leaven of home-owning, free men enjoying the material and psychological independence which home ownership affords.

Our age cannot be considered as one of stability. Instability comes from lack of roots, physical and metaphysical, in the existing order. Men who have a tangible stake in society which they can pass on to their children are not revolutionaries. Marx's appeal avowedly was to those who "have nothing to lose". The French Revolution was fermented in property-less, rootless, dispossessed and desperate men and women. England, in the same age, and subjected to possibly greater stresses in the Industrial Revolution then occurring, came through without social and political upheaval. In this the yeomen of England—the small, independent landholders—played a decisive role. This is not to neglect the effect of the great evangelical revival which preceded, but even spirituality will not widely flourish in a context of social instability, and the backbone of the evangelistic, missionary, and Bible Society movements in England was found in the middle class of small landholders.

In the field of national economics, it is obvious that there must be some element of flexibility; it is impossible indefinitely to sustain complete stability in the relationship of production, income, and expenditure. Income is the most sensitive and variable. Insecurity of habitation, dependent upon and consuming (as rent) a high proportion of income, greatly increases the effect of fluctuations in income.

In the same way, the various measures loosely grouped under the heading "social security" must be very greatly increased to meet the problem of rent, admittedly the greatest single problem in any system of social security. The ability of the nation readily to adjust to fluctuations in the economic sphere, without either drastic regimentation or excessive expenditure, will be determined to an important extent by the proportion of the population who have security of habitation through home ownership.

Finally, the extent to which the rising generation is affected in terms of psychological and emotional stability by the family's living in secure habitation which is their own property has not yet been comprehensively examined on a scientific basis, but it is quite clear that where a family is suddenly deprived of habitation, the shock can be profound.

It has frequently been pointed out in addresses to the Profession across Canada, and in earlier articles in the "Journal", that the body of a nation's professional men is to a great extent the custodian of that nation's intellectual freedom and progress. Measures to maintain economic security for the members of a profession are important from the standpoint of national well-being as well as that of the individual.

Next month's "Journal" will carry the first of a series of three articles on "Professional Liability of Dentists" by Mr. Edson L. Haines, Q.C., a recognized authority in the field of professional liability who, at the invitation of this department of the "Journal", was especially selected by the Law Society of Upper Canada to write on this important subject. Following these will be a series by Mr. Stewart Bates, President of Central Mortgage and Housing, writing on the subject of building standards for residential construction, and of the work of CM&H to assist Canadians to own their own homes.

THE CORPS

A one-volume publication entitled "The Story of the Royal Canadian Dental Corps" is now at the printers. This history is a comprehensive account of the Corps from its inception in 1904, through two world wars to the present time. In fact, it goes back even further to name the Canadian Dentists who saw service during the South African War. The appendices list all dental officers who have served with the Corps as well as their periods of service. Lt-Col. H. M. Jackson, Director of War Service Records, is the author of this interesting and factual volume.

The promotion of Captains P. L. Falkner, J. D. Bourque, W. H. Murray and E. J. C. Small to the rank of Major has recently been announced.

Major Falkner was born at London, England, coming to Canada at an early age. He served with the RCAF in the United Kingdom and North-West Europe and on demobilization, enrolled in Dentistry at McGill University. Following graduation in 1951 he was appointed to the RCDC and has served in both eastern and western Canada. At present he is stationed at Winnipeg. Major Falkner is married and has two children.

Major Bourque is a native of River Bourgeois, N.S. His war service was spent with the RCN, in Frigates. On demobilization he enrolled in Dentistry at Dalhousie University and was appointed to the RCDC on graduation in 1951. His post-war service has been spent principally on the east coast except for a tour of duty in the Far East.

Major Bourque is married and has three children. He is presently employed at Greenwood, N.S.

Major Murray was born at Saint John, N.B., receiving his early education there and at Charlottetown. After demobilization by the RCAF in 1945 he attended the University of New Brunswick and entered the Dental Faculty of McGill University in 1947. On graduation in 1951 he was appointed to the RCDC and has since served in the maritime Provinces except for a tour in the Far East. Major Murray is stationed at Dartmouth, N.S. He is married and has three children.

Major Small is a Haligonian by birth and received his early education there, receiving a B.A. degree from St. Mary's College in 1938. In World War II he saw six years' service with the RCDC in Canada. He attended McGill University and was awarded the degrees of B.Sc. in 1950 and D.D.S. in 1951. He has served with the RCDC in eastern Canada since his appointment in 1951 and is presently employed with No. 1 Field Dental Unit in Germany. Major Small's wife and three children accompanied him to Germany.

Majors G. C. Evans and L. G. Craigie of the RCDC School recently returned from courses at the Walter Reed Army Medical Centre, Washington, D.C. and the Naval Dental School, Bethesda, Md., respectively.

Major T. D. Joslin has been released from the Royal Canadian Dental Corps.

Lt.-Col. D. T. Wilson, Commanding Officer, No. 51 Dental Unit (Militia), is shown receiving the Ash Temple Trophy from Brigadier J. R. B. Jones, Commander, New Brunswick Area, at Camp Utopia. At left is Colonel J. F. Edgecombe, A.D.D.S., Dental Advisory Staff (M), Eastern Command. This trophy is presented for rifle competition.

N.D.E.B. EXAMINATION RESULTS

The following candidates were successful in the November examinations of the National Dental Examining Board of Canada:

Dr. Ayako Marjorie Wani, Scarborough, Ontario.

Dr. Eli Adler, Winnipeg, Manitoba.

Dr. Marvin Glen Crowell, Grande Prairie, Alta.

Dr. Julius Dick, Willowdale, Ontario.

Dr. Randolph H. Headley, Montreal, Que.

Dr. Darroch Aubrey Hollett, St. John's, Newfoundland.

Dr. Sidney Robert Kirson, New Denver, B.C.

Dr. Gundega Kravis, Thistletown, Ontario.

Dr. Donal Joseph MacPhee, Camp Borden, Ontario.

Dr. William Melvin Taskey, Edmonton, Alberta.

The American Dental Association's Council on Legislation has begun its drive for enactment by Congress of legislation which would aid self-employed individuals in establishing voluntary retirement programs. Known as the Jenkins-Keogh bill, this proposal would permit dentists, lawyers and other self-employed persons to deduct from yearly income a limited tax-free amount to be placed aside in a retirement fund. Taxes would be paid when the individual retired and began collecting his pension.

THE PROVINCES

Alberta

Central Alberta Dental Society

The Central Alberta Dental Society met in Red Deer recently. Sixteen members from Lacombe, Ponoka, Stettler, Innisfail, Rocky Mountain House, Rimbey, Olds, and Red Deer were present. Nine members of the Edmonton and District Dental Society, headed by their president, Dr. A. Lane, also attended.

Principal speaker at the dinner was Dr. C. Castaldi, head of the Paedodontic department of the Faculty of Dentistry, University of Alberta.

Chairman of the meeting was Dr. D. Culham, Ponoka. Dr. S. Fleming was appointed chairman for "Dental Health Week". The speaker was introduced by Dr. Bud Blackmore, Edmonton, and thanked by Dr. S. Fleming.

Dr. E. M. Doyle Honored

Dr. E. M. Doyle was honored with the presentation of a plaque by the Alberta Dental Association recognizing completion of 50 years of practice in Calgary, at a recent meeting of the Calgary Dental Society. Dr. Doyle is a former president of the Western Canada Dental Association, the Calgary Dental Society and the Alberta Dental Association.

Conference on Dental Education

Through the co-operation and generosity of the Council of Dental Education of the Canadian Dental Association and the Kellogg Foundation, a conference on dental education was held at the University of Alberta on December 19, 20 and 21, 1956. All members of the Faculty of Dentistry attended.

Dean A. C. Lewis of the Faculty of Education, University of Toronto, was guest speaker. The Faculty of Education, University of Alberta, arranged the program with Dean Scott Hamilton, Faculty of Dentistry. Dean H. J. Coutts of the Faculty of Education, University of Alberta, and his efficient associates are to be commended for their efforts.

Lectures were given by Drs. Samuels, Gilmour and Fee of the Faculty of Dentistry which were very valuable as illustrations of the different types of lectures in dentistry.

Considerable interest has been created in this type of conference by other faculties on the campus.

R. S.

Edmonton and District Dental Society

Guest speaker at the January meeting of the Edmonton and District Dental Society was Dr. G. Brown, specialist in treating diabetics. He felt that dentists could help discover undetected diabetics and thus render an extra health service to their patients. He discussed the oral conditions associated with the disease, and emphasized that dentists serving known diabetics would be wise to consult with the patient's physician.

Dr. E. R. Upton, president of the Alberta Dental Association, was a visitor at the meeting. He described generally the work of the Provincial association and specifically that of some of its committees.

Dr. James Zimmerman spoke briefly concerning some C.D.A. matters. He also urged his listeners to plan to attend the Tenth Triennial meeting of the Pacific Coast Dental Conference to be held in San Diego next August. He further made a plea for the formation of more study clubs in dental subjects among the practitioners in this province.

G. C.

British Columbia

Dr. Emery C. Jones Honoured

Fifty years after his graduation from the R.C.D.S., Dr. Emery C. Jones, who retired as Registrar-Treasurer of the B.C. College of Dental Surgeons at the end of January, was honored by being presented with a silver rose bowl at the December meeting of the Vancouver and District Dental Society.

It was a time of tense emotion as Emery stood to receive the token of esteem for so many years of selfless service rendered by one so capable. Responding, he modestly and typically stated that he had done nothing more than any one of the 200 present!

Dr. Jones, after practising in Ontario for six years, came to B.C. in 1912. He recalls that at that time the Dental Society met in the old Strand Hotel with eight or ten attending each time. (Now the membership is over 300.) He was an elected member of the Council of the College for 30 consecutive years. From 1919 until 1921 and again from 1945 until 1953 he was President of the Council, and in the latter year he retired from active practice to become Registrar of the College.

At the last B.C. Dental Convention Dr. Jones was one of the eight recipients of framed diplomas attesting membership in the 75-50-25 Club, which is composed of dentists who have practised for 50 years, 25 of them in B.C., and who are 75 years of age.

Hale and hearty, beloved by all, and still valued for kind counsel, Emery passes into his well-merited retirement with the best wishes of the dental profession in British Columbia.

D. H. M.

DR. EMERY C. JONES

Ontario

Hamilton Dental Association

The Hamilton Dental Association had its first monthly meeting of the season October 11th at Fischer's Hotel. As is customary it was preceded by a fellowship hour. Dr. Foster Kilgour, president of the Association, was in the chair. After the business part of the meeting an excellent lecture, well illustrated with slides of fine quality, was presented by Dr. George Hare of Toronto. His subject was "Emergency Endodontic Treatment in Accidents to Children". This lecture proved extremely interesting and of practical value to the general practitioner.

Ladies' Auxiliary night was held November 3rd, at McMaster University. A buffet supper was served following which Dr. R. G. Ellis gave a delightfully interesting talk studded with fine wit and humor, on his trip to Australia during his leave of absence from his post as dean. Excellent slides and movies were shown also to make the evening a very pleasant and memorable experience.

On November 8th, Dr. M. N. Rockman of Toronto gave a fine talk and showed his excellent slides on "Fundamentals in Radiographic Interpretation". During the business part of the meeting a report on Hospital Dental Services as offered at the Hamilton General Hospital was presented by Dr. Peter T. Smylski, Chief of Dental Services. A rotating dental interneship has been initiated at the Hamilton General Hospital.

The December meeting was a social event to which the Dental Nurses and Assistants were invited as guests. A delectable turkey dinner was enjoyed, following which a few short after dinner speeches were heard. Dr. Art Hill on behalf of the Association presented a plaque to Mr. Harry Moore, the manager of Ash Temple on his retirement from service with the firm.

Mr. Jack Stewart showed a film on "The Miracle of the Bees" which was educational and enjoyed by all. Thus concluded the activities of the first half of the season.

P. T. S.

The Dental Alumni Association, University of Toronto

Executive Committee for 1957 —

Honorary President—Dr. A. D. A. Mason
Past President—Dr. E. Rollaston
President—Dr. J. M. Crawford
President Elect—Dr. R. D. Leuty
Treasurer—Dr. B. Gross
Secretary—Dr. H. Hunter
Assistant Secretary—Dr. W. O. Nursey

District Representatives —

Central—Dr. F. T. Pearson
North—Dr. M. Cornish
East—Dr. J. F. Freeman
West—Dr. M. E. Lucyk
Downtown—Dr. H. H. Canning
Hamilton—Dr. Banting and Dr. Shearer

The Dental Alumni Association, this fall, initiated two very successful events.

The first, on the evening of Thursday, October 18th, an office visitation for the senior students of the Faculty of Dentistry, took place in the Medical Arts Building, in the offices of Drs. K. Clark, F. Martin, G. A. Morgan, R. Erickson and W. G. McIntosh. This was to give the graduating students an idea as to how different types of offices are furnished and operated. About 85 students and friends attended this very successful evening and at the close were entertained at a buffet supper in the Prince Arthur House.

The second meeting, in conjunction with the Faculty of Dentistry, was the Second Annual Faculty Alumni Day, and was for the benefit of the graduates of the Faculty of Dentistry. This meeting took place at the Faculty buliding, from 9.30 a.m. to 5 p.m. With the cooperation of the Faculty staff, a very successful and enlightening programme was presented through the medium of live, closed-circuit television.

The clinicians presented their different subjects, over a number of television screens, so clearly that each individual of the group of over one hundred alumni members present, was able to view and hear without obstruction, what in the past, at a group clinic of this type, only three or four of the twelve to twenty present would have seen clearly.

The Clinics presented follow:

(1) The Skin of your Teeth — Dr. G. Nikiforuk

(2) Fabrication of a Pinch Band
Treatment of a Fractured Incisor — Dr. E. R. Crocker

(3) Simple Treatment for a Crossed Bite Upper Incisor — Dr. A. Posen

(4) Proper Mixing and Packing of Amalgam — Dr. G. W. Johnston

(5) Dental Anaesthesia — Dr. R. S. Locke

(6) Motion Picture — Anatomy of the Mouth with particular reference to Complete Denture Prosthesis — Dr. E. P. Downton

(7) Practical Uses of Periodontal Packs — Dr. W. G. McIntosh

(8) Preparation of a Bridge Abutment — Dr. Frank Martin

(9) The Use of Hydro-colloids in Fixed Bridge Work — Dr. W. D. P. Cavanagh

At the Annual meeting held during the Faculty Alumni day, Bursaries in the sum of $400 were donated to the Faculty, with the hope of more to come.

R. M.

Quebec

Montreal Dental Club

The monthly dinner meeting of the Montreal Dental Club was held on Monday, November 19, 1956, at the Windsor Hotel. Guests seated at the head table were Drs. L. Bernier and R. Langlois of Quebec City, and Dr. R. Charette.

Following the dinner and before the regular monthly meeting got under way, Dr. R. Langlois and Dr. L. Bernier spoke very convincingly of the necessity of a Provincial Dental Society. Such a society, they pointed out, would serve to incorporate the various Provincial societies, assist them in presenting their points of view and create a unity within the profession.

Dr. Roger Charette, President of the Société Dentaire de Québec, and the Chairman of the 1958 C.D.A. Convention to be held in Montreal, asked the assistance of the Montreal Dental Club members—because of their previous experience in acting as C.D.A. Convention hosts — in planning the 1958 convention.

The monthly meeting then began with the reading of the minutes of the last meeting. There being no new business to discuss, Dr. McDonald moved that a cable of encouragement be sent to Dr. Archie Cameron who was in Australia representing Canada in the Olympic Games in sailboat racing. His motion was seconded by Dr. Roger McMahon and heartily endorsed by all club members.

Dr. E. S. Dorion then spoke at length on the make-up of the College of Dental Surgeons of the Province of Quebec, stating that there are 35 governors on the board, 26 being elected and 9 appointed. Those members of the Montreal Dental Club who were elected to the board were Drs. R. T. Lamb, H. T. Oliver, J. M. Chamard, and H. L. Mussells. Those appointed included Drs. J. McCutcheon, A. G. Racey, E. S. Dorion, G. G. Armitage, and W. Charland.

Dr. Vic Dubé was elected President of the Board, Dr. E. S. Dorion, First Vice-President, and Dr. R. Langlois, Second Vice-President.

Just prior to the elections, it was announced that the grant given by the C.D.S.-P.Q. to the C.D.A. was raised from $15.00 to $20.00 per member.

Dr. G. G. Armitage then outlined and praised the work of Dr. J. Abraham as past President of the C.D.S.P.Q. A round of applause was asked for Dr. Abraham by Dr. A. T. Donohue and heartily given by all.

Dr. Bruce Ward, Chairman of the 1956 Montreal Dental Club Fall Clinic, then outlined the sequence of events which took place since the Société Dentaire de Québec was asked in 1954 to act as hosts for the

1958 C.D.A. Convention. These included a letter from the C.D.S.P.Q. asking for the support of all the Provincial Societies for its success. Dr. Ward stated that it had been decided to combine the 1958 Montreal Dental Club Fall Clinic with the 1958 C.D.A. Convention, rather than having the two separate and having one suffer because of the other. The combined Clinic and Convention will be held in the new Queen Elizabeth Hotel.

The meeting was moved adjourned by Dr. Kelly and seconded by Dr. Guilboard.

The December meeting of the Montreal Dental Club took the form of an oyster and baked bean party, and was held at the Lacombe Ave. Armories on Wednesday, December 12, 1956, beginning at 6 p.m. Judging from the number of oysters and plates of beans consumed, and the contented look on the faces of those who partook, the party was highly successful. Colored films on the Gaspé and trout fishing in Canada's northern lakes brought the evening activities to a close.

W. D. S.

The 35th anniversary of the Mount Royal Dental Society was highlighted by the presentation of Honorary Membership in the society to Dean Ernest Charron of the University of Montreal Dental Faculty; and to Dr. Gerald Franklin, Professor and Chairman of the Department of Orthodontics at McGill University. The honour is reserved for those men who have made outstanding contributions to the Profession of Dentistry.

Left to right are: Dean James McCutcheon, Faculty of Dentistry, McGill University; Dr. Morton R. Lang, President of the Mount Royal Dental Society; Dr. Louis J. Rosen, chairman of Special Arrangements Commitee; Dr. V. Dubé, President of the College of Dental Surgeons of the Province of Quebec, who accepted for Dean Charron; Dr. Gerald Franklin, Professor and Chairman, Department of Orthodontics, McGill University; and Dr. Arthur S. Solomon, Founder and First President of the Mount Royal Dental Society

Mount Royal Dental Society

The Mount Royal Dental Society celebrated its 35th Anniversary on Saturday, November 24th, with a dinner dance held at the Mount Royal Hotel and honored two local men with the presentation of honorary membership in the Society.

Dean Ernest Charron of the University of Montreal, Dental Faculty, was presented in absentia with honorary membership in the Mount Royal Dental Society. Dr. L. J. Rosen in bestowing the honor, outlined at length Dr. Charron's many accomplishments and pointed out that under his leadership, the Dental Faculty at the University of Montreal had gained its high rank among the institutions of higher learning. A plaque commemorating his contribution to dental education and worthy interest in the society was presented. Unfortunately, Dr. Charron could not be present and Dr. V. Dubé, President of the College of Dental Surgeons of the Province of Quebec, accepted for him.

The founder and first president of the society, Dr. A. S. Solomon, then bestowed Honorary Membership upon Dr. Gerald Franklin, Professor and Chairman of the Department of Orthodontics, McGill University. This honor was given for his outstanding contributions as a teacher, to the war effort, and as a member of the Society. In making the presentation, Dr. A. Solomon outlined his outstanding scholastic record, his service during World War II, and stated that Dr. Franklin enjoys an international reputation among his confreres. He pointed out that he was instrumental during the formative years of the Society, always conscientious, yet unassuming, and that the Society has benefitted from his sincerity, good judgment and profound observation.

Dr. Franklin, in accepting this honor, said that the future of the profession of Dentistry depends not on one brilliant discovery, or on the research men, or on the statisticians or politicians, or specialists, but on the service the general practitioner gives to the public in his everyday practice.

On this 35th Anniversary occasion, Dr. P. Gitnick, of the Department of Periodontia, McGill University, announced that in memory of the late Dr. D. P. Mowry, former Dean of the Faculty of Dentistry, McGill University, the Mount Royal Dental Society will sponsor an annual Memorial Lecture in his name.

Guests present included: Dr. A. T. Donohue, President of the Montreal Dental Club; Dr. D. V. Dubé, President of the College of Dental Surgeons of the Province of Quebec; Dr. G. Franklin, Professor and Chairman of the Department of Orthodontics, McGill University; Dr. S. Joffe, President of Alpha Omega Dental Fraternity; Mrs. D. P. Mowry; Dean James McCutcheon, Faculty of Dentistry, McGill University; Dr. A. S. Solomon, Founder and 1st President of Mount Royal Dental Society; and Dr. V. Tremblay, President Société Dentaire du Montréal.

The meeting was under the convenorship of Dr. F. Vosberg, chairman of arrangements committee, and Dr. L. J. Rosen, chairman of special arrangements.

D. S.

Saskatchewan

College of Dental Surgeons

Recommendations for improvement in the dental portion of the public assistance program, involving payments of grants-in-aid for dentures and extension of eligibility for orthodontic care, were suggested at the council of the Saskatchewan College of Dental Surgeons' semi-annual meeting held in Regina recently.

A serious deficiency in training facilities for dental personnel was discussed with Health Minister Walter Erb, as well as the need for bringing the Dental Act up to date.

Topics discussed at the meeting included a resolution to set up a committee on dental education to advocate the establishment of dental interneships in hospitals, and a decision to request the inclusion of a representative dentist in advanced civil defence courses.

The council approved a proposed dental technicians act governing licensing of dental laboratories, and appointed a committee to revise regulations governing the certification of dental specialists in the province.

Elected to the council in October were:

Dr. R. O. Brett, Regina, Dr. F. R. Smith, Saskatoon, and Dr. W. R. Watchler, Yorkton, re-elected president and vice-presidents respectively; Dr. A. D. Leask, Moose Jaw, and Dr. J. P. Whyte of Swift Current, re-elected members.

High Sugar Consumption

'The higher the sugar consumption the larger the dental health problem,' says Dr. A. E. Chegwin, director of dental health in the Saskatchewan Department of Public Health.

Dr. Chegwin noted a Bureau of Statistics report that per capita consumption of sugar in Canada during 1955 amounted to 99.2 pounds, an increase of practically three pounds as compared with the preceding year. It was 4½ pounds more than the average consumption in the years 1935 to 1939 inclusively.

IN MEMORIAM

Louis Doering — Dr. Louis Doering, of Philipsburgh, Ontario, died recently after a month's illness. He was 79.

Dr. Doering was born in Philipsburgh. He practised dentistry in Kitchener and Mildmay until retirement 25 years ago.

His wife pre-deceased him in 1944, surviving are one son, Lloyd of East Zorra Township, one daughter, Mrs. A. Cowley of Toronto, and one brother, Theodore of Philipsburgh. There are eight grandchildren and three great-grandchildren.

Stanley Strothard Harvey — Dr. Stanley Strothard Harvey died on December 5th, 1956, in his eightieth year. He had been failing in health for several weeks.

Dr. Harvey was born at Avondale, Hants County in 1877. He graduated from the University of Colorado in 1903 and two years later completed post-graduate work in dentistry at the University of Pennsylvania.

He opened his first practise in Parrsboro and joined the Canadian Dental Corps when war broke out, serving as unit dentist with the 85th Battalion on this side and overseas. After the war he was for a period, officer commanding the dental corps at Camp Hill hospital and, on taking his discharge, opened a practice in Pictou, Nova Scotia, where he remained up to his death.

Dr. Harvey was an adherent of St. Andrew's Presbyterian church and a member of New Caledonia lodge, A.F.&A.M. and also of the Pictou Branch, Canadian Legion.

He is survived by his wife, and two sons, Jack and Stanley, of Digby.

Sydney D. Florian — Dr. Sydney D. Florian of Sydney, N.S. died suddenly on December 27, 1956. He was 63.

He was born in Sydney and attended Sydney schools and Mount Allison University. During the First World War he served with the 8th Siege Battery. After his return he attended Dalhousie School of Dentistry where he graduated in the early 1920's.

Prominent in Masonic circles, Dr. Florian was Past Master of St. Andrew's Lodge No. 7 A.F. and A.M. He was an ardent curler and took a keen interest in hunting and fishing.

Surviving are his wife Hazel, one daughter Mrs. A. Moffatt; four sons, William, Charles, James and David, all of Sydney. A step-brother, A. W. Woodill, also survives.

Hugh Mustard — Dr. Hugh Mustard 68, of Sarnia, died suddenly from a heart attack on December 31, 1956. He was born in Wyoming in the year 1888.

Dr. Mustard graduated from the University of Toronto Dental College in 1911, he practised in Winnipeg and Camrose, Alta., before going to settle in Sarnia.

He was a member of St. Andrew's Presbyterian Church and an Elder. Dr. Mustard was also a member of St. Paul's Lodge No. 252, A.F&A.M., Wawanush Chapter, Royal Arch Masons and was past provincial Prior Knights Templar of Ontario and a member of St. Simon of Cyrene Preceptory No. 37 of Sarnia; a member of Lambton Shrine Club and Mocha Shrine of London. He was a former member of Sarnia Riding Club and the Photocromatic Club, and Sarnia Golf Club.

Surviving are, his wife Helen, a daughter, Mrs. C. Ross, Ottawa; two sons Dr. H. A. Mustard of Montreal and John D. Mustard of Sarnia; a sister and two brothers.

Ernest Wallace — Dr. Ernest Wallace of Winnipeg, died Monday, December 24, 1956.

Dr. Wallace attended Manitoba College and the Royal College of Dental Surgeons in Toronto, graduating in dentistry in 1923.

He served overseas during the First World War with Lord Strathcona's Horse and later with the Royal Flying Corps. He had been a dentist in Winnipeg since 1923. Dr. Wallace was a member of the Manitoba Dental Association and had served on the executive of the Winnipeg Dental Society. He was past master of the Masonic Lodge, A.F.&A.M. and also a member of the Canuckeena club.

Surviving are his wife Minnie and a brother Alfred George, two sons Dr. Russell E. and Gilbert A. and three grandchildren.

Arthur H. Henderson — Dr. Arthur H. Henderson, who practised in Vancouver for 33 years, passed away in St. Paul's Hospital on December 26 at the age of 67. He was born in London, England and graduated from the North Pacific College at Portland, Oregon in 1923.

Dr. Henderson was a veteran of World War I and was one of the original members of the Newman Club. He was Treasurer of the Vancouver Oratorical Society, a member of the Vancouver Rose Society and the Lions' Glee Club. Surviving are three daughters, Mrs. Hiram Love, Seattle, and Dorothy and Margaret of Vancouver.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th
1959	Halifax, Nova Scotia	June 21st-24th
1960	Ottawa, Ontario.	

FUTURE EVENTS

Date	Function	Location	Officer	Address
Feb. 15, 1957	Faculty of Dentistry At-Home	Royal York Hotel, Toronto Ont.	Mr. Manny Norman	230 College St., Toronto 2B, Ont.
Feb. 21, 1957	Dental Workshop Conference	Royal York Hotel, Toronto Ont.	Dr. F. H. Compton	City Hall, Toronto, Ont.
May 12-15, 1957	Ontario Dental Assoc. Convention	Toronto, Ont.	Mrs. R. E. Booker	234 St. George St., Toronto 5, Ont.
May 16-18, 1957	British Columbia Dental Assoc. Convention	Empress Hotel, Victoria	Dr. Ross Upton	Executive Secretary, 217 Medical-Dental Bldg., Vancouver 1, B.C.
May 29–June 1st 1957	American Academy of Dental Medicine Annual Meeting	Hotel Sheraton Plaza, Boston, Mass.	Dr. A. Gold	Chairman, 26 Maple Street, Springfield 3, Mass.
June 10, 11, 12, 1957	Maritime Dental Convention	Moncton, N.B.	Dr. G. Cormier	120 Queen St., Moncton, N.B.
Aug. 19-22 1957	Pacific Coast Dental Conference	San Diego, California	Dr. C. W. Gilman, Secretary	219 E. 8th Street, National City, California
Sept. 7-14, 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy	G. H. Leatherman	Secretary, London, England

GRADUATE COURSE

Faculty of Dentistry, University of Toronto

Applications will be received up to March 1st, for enrolment in postgraduate courses leading to specialist certification in the fields of Dental Oral Surgery and Anaesthesia, Orthodontics, Paedodontics, and Periodontics. Enrolment in each course is limited and the courses extend over a period of two academic years (Surgery three years). Applicants must present evidence of satisfactory completion of courses leading to the D.D.S. degree or its equivalent from an acceptable dental school.

SHORT GRADUATE COURSE

Faculty of Dentistry, University of Toronto

ORTHODONTICS

March 11-15, 1957 **Enrolment Limit 12**

This course is designed for the general practioner. It comprises a review of anatomical structure, the development of head and jaws, normal occlusion and, in addition, the aetiology of malocclusion, tissue reaction during orthodontic therapy and modern therapeutic methods for the interception of malocclusion. Laboratory and clinical periods will be scheduled to include patient examination, appliance construction and manipulation. Sessions will be scheduled during which registrants may present practical cases for consultation and discussion.

The course will be under the general direction of Dr. D. G. Woodside.

Tuition Fee $100.00

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3 1957 **Enrolment Limit 12**

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fracture of the jaws, cysts root resections, abnormal frena, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee $100.00

For further information and application forms address inquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto, Ontario.

Montreal Endodontia Society

Two day Endodontia Session at McGill University, Montreal, February 28th and March 1st.
Clinician: Dr. B. Nygaard Ostby, Norway.
Fee $20.00. Limited Accommodation.

Write: Dr. D. J. Munro, Secretary-Treasurer, Montreal Endodontia Society, 1410 Guy Street, Room 14, Montreal, P.Q.

Volume 23
Numéro 2
Février 1957

Journal
E L'ASSOCIATION DENTAIRE CANADIENNE

La psychologie appliquée à la pratique dentaire

par JEAN-PAUL GAGNON, B.A., D.D.S., Québec, P.Qué.

Le problème psychologique, même s'il est aussi ancien que le monde, ne demeure pas moins profondément actuel. En effet, pour peu que l'on s'intéresse à la littérature ancienne ou moderne, on doit constater que c'est là un sujet intarissable auquel tous les auteurs se sont efforcés d'ajouter une note d'originalité ou de précision. On peut constater également certains points de ressemblance: tous essaient à leur façon de mettre en lumière l'importance de la psychologie pour les individus, jeunes et moins jeunes, et ceci dans tout rang de la société.

Les parents se doivent d'étudier leurs enfants, pour les mieux comprendre, pour faire en sorte que ces derniers deviennent des êtres en parfait équilibre physique et mental. Bientôt l'école leur vient en aide, et il appartient également aux éducateurs d'élargir la voie déjà tracée. Et voici que de nouveaux horizons se dressent: c'est un patron maintenant qui assumera la tâche de voir au bien-être et au confort de ses employés, et qui saura demeurer d'eux le plus fidèle ami. Nous pourrions passer en revue de la même façon les diverses classes de la société. Sur un autre plan, bien peu différent, l'on peut dire que le dentiste, tout comme le médecin, doit user d'une grande psychologie à l'endroit de ceux qui ont recours à lui.

En effet, les gens qui rendent visite au dentiste ne sont pas des individus ordinaires; ce sont des gens qui ont un malaise organique quelconque, s'amenant avec la ferme espérance que le dentiste va trouver le chainon qui les reliera de nouveau à une excellente santé; ce sont des gens qui craignent la douleur quand ils ne sont pas déjà aigris par celle-là; ce sont des gens dont l'état de santé générale peut exiger telle ou telle précaution; enfin, ce sont des gens de tout âge, plus ou moins pressés, plus ou moins influençables, plus ou moins bien disposés au point de vue pécuniaire, je dirais même, plus ou moins capricieux en ce qui regarde le coté esthétique, car pour nombre d'individus, hélas, seul ce dernier point de vue a de l'importance. Et voilà: tel un

politicien vis-à-vis ses électeurs, le dentiste doit faire face à tout un monde dont chaque membre ne se ressemble guère au point de vue psychologique.

Nous essaierons d'esquisser les traits du véritable praticien dentaire, aux prises avec lui-même, avec un public capricieux à satisfaire, avec la douleur et son appréhension, également avec d'autres problèmes qui ne sont pas aussi secondaires qu'on ne saurait se l'imaginer, et ceci, dans les différents domaines qu'englobe la science dentaire.

"Un vrai dentiste est celui qui sait réunir heureusement en lui, les traits de l'habileté professionnelle, propreté, courtoisie, bonté, et sympathie humaine, à un degré tel qu'il inspire confiance à ses patients, enfants et adultes, au point que ces derniers soient fiers de le reconnaître pour leur dentiste, fiers et orgueilleusement satisfaits de ses services."[1] Appliquée à l'art dentaire, la psychologie crée un problème qui, je crois, retombe sur *le dentiste lui-même.* En effet, le praticien doit s'efforcer de combiner harmonieusement en lui, un groupe de qualités physiques, intellectuelles et morales, qui soit son plus merveilleux blason, un appât infaillible pour être considéré favorablement auprès de ses patients, lesquels, en somme, "sont ses plus fidèles ambassadeurs."[2]

Qualités physiques

On ne saurait jamais trop insister sur la question de la propreté. Le comportement physique est d'habitude le reflet du comportement moral. Il faut donc voir là un point de rigueur absolue. Tous, jeunes et vieux, ont un dédain tout-à-fait instinctif et naturel de sentir dans leur bouche ce qui pourrait respirer malpropreté. Bannie à jamais la confiance en celui qui s'approcherait d'eux avec des mains maculées, avec des habits où le métaphen, le sang de tout chacun, où la pâte à prophylaxie, semblent s'être donné rendez-vous d'une façon courante. C'est psychologique: les gens vont chez celui dont le maintien inspire davantage, celui aussi qui sait les recevoir dans un endroit invitant.

Il n'est pas superflu, en effet, de dire quelques mots du bureau lui-même et de ses accessoires. Personne n'aime attendre. Aussi faut-il que le dentiste fasse attendre sa clientèle dans un endroit agréable, une salle dont les murs suggèrent le repos et non l'énervement, une salle qui saura rendre l'attente plus douce. "La première impression qui influence nombre de patients est celle causée par l'état de la salle d'attente. Il est préférable que celle-là soit bien éclairée et bien ventilée, aussi grande que l'espace le permet. Les meubles doivent être arrangés avec goût. Des livres, périodiques, doivent être placés dans un endroit convenable, à la portée de ceux qui peuvent avoir à attendre. Il est désirable que les conversations et les bruits pouvant faire écho de la salle d'opération, soient éliminés, soit par la distance, soit en rendant la chambre d'opération à l'épreuve des bruits. Même malgré les plus grandes précautions, certains patients crieront, se lamenteront, surtout quand un anesthésique général leur est administré. De tels bruits ont toujours une mauvaise influence (disheartening or frightening influence) sur un patient qui attend son tour."[3]

Dans le bureau, le patient aime à sentir du confort à tous les points de vue. "Une chambre assez spacieuse a généralement une influence salutaire sur l'état d'esprit du patient."[4] Des murs aux couleurs criardes ne sont pas de mise. Au contraire, des couleurs reposantes ont à la fois un bon effet et sur le patient et sur la vue de l'opérateur. Il est désirable que les cabinets à instruments soient disposés de façon à ce que leur contenu ne tombe pas en ligne directe avec la vision du patient; la vue des instruments ont souvent sur certains individus une influence troublante. Chacun aime à être assis confortablement et ce doit être là une première préoccupation du dentiste. Enfin un équipement qui ne reluit pas de propreté et qui laisse voir de vieilles taches d'huile, un air vicié par des odeurs de médicaments, un crachoir mal lavé, ou

des déchets mal camouflés, tout cela peut facilement créer une impression plus ou moins défavorable pour celui qui, en somme, s'attendait rendre visite à une personalité marquée de la société.

Qualités intellectuelles

Que ce soit pour son propre profit ou pour celui de son entourage, le dentiste doit, en effet, s'efforcer de maintenir intellectuellement un niveau digne de lui-même.

Comme toute autre, la science dentaire évolue de jour en jour et le praticien doit ressentir une joie bien légitime de se savoir à la page, de connaître les plus récentes découvertes qui lui permettront d'améliorer ses méthodes, de profiter de l'expérience de ses collègues, de connaître davantage le maniement de ses patients, pour fournir ainsi des journées de travail de mieux en mieux remplies et se rendre de plus en plus utile à ses concitoyens. On sait que la recherche demande toujours de l'effort. Au début de la saison, la jardinière passe d'incalculables heures pour ensemencer ses fleurs, pour les disposer avec ordre et goût. Quelques mois plus tard, elle est toute heureuse de pouvoir orner son vivoir d'un beau bouquet de roses aux couleurs variées ou de pouvoir offrir à sa meilleure amie une belle gerbe de fleurs, fruit de son travail persévérant.

De la même façon, le dentiste est heureux d'offrir à ses semblables le fruit de son effort: il est une lumière pour les autres. Ses connaissances doivent rayonner tout autour de lui. Sont *facilement conquis* les patients qui voient en leur opérateur un homme avisé, un homme qui leur donne des conseils précieux, un homme qui enfin bannit à tout jamais les vieilles méthodes désuètes pour n'employer que les plus récentes, celles qui sont le produit de l'avancement de la science. Si la ville fait un peu exception, il n'en reste pas moins que dans les grosses agglomérations rurales, le dentiste sait à l'occasion être l'homme de confiance de la population, et ces gens deviennent automatiquement des clients fidèles et confiants, dans la mesure où le dentiste lui-même aura su participer à leurs organisations, en être le chef ou simplement le conseiller. Qu'on le croie ou non, c'est un cas où la psychologie, appliquée en dehors du bureau, a sa répercussion directe dans la pratique dentaire.

Qualités morales

Toutes les considérations antérieures sont bien diminuées de valeur, si l'on oublie le coté *moral* de la question. En effet, le dentiste sera d'autant plus psychologue, il saura comprendre davantage ses patients, en autant qu'il aura su développer en lui un groupe de qualités morales essentielles. Si vous le voulez bien, nous allons les repasser ensemble le plus succinctement possible.

Le comportement du dentiste peut en effet avoir une saine influence sur son entourage. S'il veut qu'on dise de lui qu'il est bon pour les autres, il faut qu'il soit avant tout bon pour lui-même. Il est difficile de concevoir qu'une personne puisse avoir une conduite intérieure tout-à-fait irrégulière, sans que celle-là se répercute sur ses semblables. Au contraire, *une heureuse vie familiale* est bien susceptible de développer plusieurs bonnes qualités. Il est plutôt rare que l'on donne entière confiance à celui dont *l'honnêteté* est mise en doute. Par contre, on se livrera volontiers aux soins de celui chez qui l'on sent un grand *dévouement*. Comme l'enfant aime bien sa maman qui lui est dévouée vingt-quatre heures par jour, un patient ira facilement chez le praticien qui se voit avant tout en face d'un individu avec telle ou telle condition pathologique, et non pas d'un individu dont le gousset est de telle ou telle rondeur. "Ici encore, plusieurs dentistes placent trop de valeur dans les dollars et les sous, croyant que la paix de l'esprit et de l'âme viendra d'une accumulation d'argent. Non, l'argent seul ne peut procurer cette paix, pas plus que la vie de famille ne s'achète: elle se vit."[5]

Qui de nous, ne s'est jamais senti dé-

sarmé devant le sourire aimable et courtois d'une jeune fille travaillant pour une compagnie au service du public, alors que plusieurs jours à l'avance nous nous promettions d'aller leur vociférer nos griefs d'un façon véhémente? Ainsi, le dentiste, de quelque façon que ce soit, verbalement, par écrit, ou au téléphone, fait plus de conquêtes avec la *courtoisie* et la *politesse,* qu'avec la rudesse et une voix de stentor. Il fait également plus de conquêtes s'il sait user de *patience* et de *franchise,* s'il sait user de ses cordes *sensibles* pour ne pas faire inutilement endurer aux autres ce qu'il n'aimerait pas endurer lui-même. Enfin, il faut au dentiste un certain sens du beau. Nombre de patients iront voir le dentiste qui leur fera l'obturation la plus discrète possible.

L'armée qui part en campagne doit être équipée pour pouvoir parer à toutes les différentes attaques ennemies. A la guerre, tout est possible: chaque soldat doit être prêt à faire face à toutes les situations. Dans la pratique dentaire, le dentiste lui aussi doit faire face à toutes les situations, aux prises qu'il est avec des gens de tout âge, de toutes les catégories, un monde, en somme, dont chaque membre est un petit univers avec des problèmes immensément variés. Certains problèmes sont communs à l'enfant et à l'adulte; d'autres ne concernent plus spécialement que l'adulte. Qu'il s'agisse de contrôler la douleur, de détruire pour rebâtir ensuite sur une nouvelle base, qu'il s'agisse de respecter le plus possible les règles de l'esthétique ou simplement de percevoir des honoraires convenables, toujours et partout le dentiste doit développer son sens psychologique à son plus haut point et se comporter en conséquence.

Le dentiste et la crainte de la douleur

Plusieurs volumes ont été écrits au sujet de l'éducation du patient, en ce qui regarde la nécessité de maintenir une bonne hygiène buccale; cependant trop peu de dentistes savent que la crainte de la douleur représente un obstacle insurmontable. Pour faire l'éducation du patient, l'on devrait commencer par lui enseigner qu'il n'y aura pas douleur. Une fois rassuré qu'il ne ressentira aucune douleur, le dentiste à son tour peut être assuré lui-même que son patient n'ayant plus peur, se prêtera plus volontiers à d'autres opérations dentaires nécessaires.

Une petite enquête menée dans une ville des Etats-Unis révéla en 1942 que plus de 50% de la population négligeait de recevoir des soins dentaires parce qu'il craignait la douleur. Ce n'est pas là un fait nouveau: on peut dire depuis que la profession dentaire existe, qu'une enquête menée dans le même sens à chaque année, aurait donné probablement des résultats identiques. Pour nombre de gens, le fauteuil dentaire est un meuble pour mesurer sa propre résistance nerveuse, pour mesurer son endurance vis-à-vis la douleur. "La crainte de la douleur est causée par des influences qui se produisent avant que le patient n'entre au bureau. L'environnement et l'éducation ont un objet bien distinct. Le cinéma, les journaux, les conversations et bien d'autres influences enseignent à la fois à l'enfant et à l'adulte qu'ils peuvent s'attendre à la douleur en allant faire une visite au dentiste. L'attitude du dentiste est également d'une grande importance, quand il s'agit d'éloigner la peur qu'a le patient. Si le dentiste est calme et rassurant, s'il prend le temps d'expliquer les méthodes qu'il emploie et s'il persuade positivement son patient que la douleur peut être contrôlée, cela contribuera beaucoup à éliminer la peur du patient."[6]

L'universelle crainte de la douleur, expérimentée par la majorité des patients qui vont chez le dentiste pour la première fois, peut de nos jours être surmontée. Il n'est pas question ici de développer les théories et les méthodes d'administration, les effets heureux de l'anesthésie locale ou générale, de l'analgésie, leurs indications et leurs contraindications. Ces patients qui se sont fait inculquer dans l'esprit par leurs parents la peur du den-

tiste, ces patients qui ont subi des séances reéllement douloureuses, peuvent être convaincus, à l'occasion de leur première visite chez un *dentiste humain,* qu'on ne leur fera point de mal. Comme conséquence, l'enfant apprendra que les opérations dentaires sont sans douleur. Voilà pourquoi, les dentistes qui font usage de l'anesthésie locale et générale, contribuent à abolir la crainte de la douleur non seulement pour la génération présente, mais aussi pour les générations futures. Si le dentiste ne veut pas considérer ce facteur à un point de vue humanitaire à l'égard de ses semblables, il peut tout au moins le considérer à un point de vue pratique parce qu'il serait sans doute avantageux dans un sens financier d'éliminer la crainte de la douleur qui fait que les patients négligent d'apporter à leur bouche les soins appropriés.

Le dentiste et la santé publique

Tout comme le médecin, le dentiste a entre les mains une partie de la santé publique. La santé est le plus précieux cadeau que nous ayons reçu et le dentiste doit être honoré d'en avoir la garde, de la maintenir en bon état de fonctionnement et de la restaurer lorsque des traitements s'imposent.

En effet, la cavité buccale, le champ opératoire du dentiste, est au début d'une bonne santé, et l'on sait déjà tous les dégats que peut causer une défectuosité dans l'organe de la mastication. Tout le monde connaît l'action d'un fruit pourri au milieu d'un sac: un enfant, aussi bien qu'une grande personne, enlèvera le fruit corrupteur, non sans examiner si d'aufruits ont subi des dommages. Ainsi le dentiste ne doit pas seulement voir une dent malade. Il doit voir tout un appareil masticatoire dérangé; il doit voir en somme une première déficience dans la santé générale de l'individu et prévenir une aggravation de cet état. Les gens sont satisfaits de leur dentiste en autant qu'ils peuvent revenir chez eux et réaliser que leur bouche est réellement en meilleur état qu'elle ne l'était; qu'ils n'ont plus de douleur, que les boissons chaudes ou froides ne leur donnent plus de sensation désagréable, qu'ils peuvent sans crainte accepter un morceau de sucre d'orge, que leur digestion est meilleure, et qu'en somme leur santé générale a accusé une amélioration appréciable. Le dentiste doit pouvoir en dire autant de son patient. Il doit être fier d'avoir apporté son concours au bien de l'humanité; il sera apprécié, aimé et visité dans la mesure où les gens se rendront compte qu'il prend bien soin d'eux, et qu'en homme avisé et mieux éclairé en la matière, il prend les moyens nécessaires pour arrêter dans l'oeuf les troubles et les infections parfois graves, dont l'origine se trouve bien souvent dans la cavité buccale.

Le dentiste et l'esthétique

Un problème auquel le dentiste doit souvent faire face dans la pratique dentaire est bien celui de l'esthétique. Bien que secondaire, si vous le voulez, puisque la santé passe avant tout, il n'en reste pas moins que l'esthétique conserve son importance, et le dentiste qui en tient compte ajoute un chaînon à la grande chaîne qui le relie à une heureuse carrière professionnelle.

Tous, jeunes ou vieux, tiennent précieusement à conserver leur visage dans le plus bel état possible, parce que les traits du visage peuvent souvent révéler toute la personne elle-même. Qui n'a pas vu le sourire disparaître des lèvres d'un enfant à qui il manque une dent antérieure, qui a une dent accidentellement fracturée, ou qui souffre d'un complexe d'infériorité parce que ses petits camarades de classe l'appellent "les grandes dents", justement là où un traitement d'orthodontie corrigerait la labio-version ou la torso-version de deux centrales supérieures? Qui ne connaît pas les angoisses d'une jeune fille ou d'une jeune dame, qui se voit dans l'obligation de se faire extraire une dent dont la position dans l'arche sert à com-

poser le sourire? Et quelle gêne pour le jeune garçon qui veut faire le beau auprès des jeunes filles et qui se voit forcé de ne pas sourire ou de le faire à demi, parce qu'il a dans la bouche un vilain "trou" pas rempli ou une dent postiche dont la couleur ne correspond pas du tout à la couleur de ses dents naturelles. Il est facile de voir que tous sont intéressés au coté esthétique et que tous sont également intéressés à rencontrer le dentiste qui sera assez habile pour redonner à leur bouche l'aspect naturel qu'elle avait auparavant.

Le dentiste et l'aspect financier

Il n'est pas question ici de donner un cours de déontologie pour initier le dentiste au genre d'honoraires qu'il lui faut percevoir, ou l'usage qu'il doit en faire. Nous voudrions seulement dire quelques mots au sujet du tact et de la psychologie que le dentiste doit exercer auprès de ses patients pour exiger de ces derniers un honoraire juste et raisonnable. La question d'argent a toujours posé un problème épineux au dentiste. L'individu ne comprend pas toujours à quel lot de connaissances le praticien doit souvent avoir recours pour faire une opération dentaire qui semble aussi élémentaire que l'alphabet et qui pourrait quelquefois entraîner des suites plus graves. En ce siècle, l'individu aime bien donner ses écus pour avoir en retour quelquechose qui paraît, quelquechose de palpable, enfin quelquechose qui en grosseur est proportionné au nombre d'écus. De la même façon qu'un agent d'assurances vend "une idée", ou d'un médecin qui exige un honoraire pour une simple consultation, ainsi le dentiste doit demander des honoraires pour des travaux qui, au point de vue matériel, ne sont pas toujours directement palpables, et qui, dans l'esprit du patient ont plus ou moins de valeur. Si beaucoup de gens savent donner à quelquechose sa valeur exacte, d'autres par contre ne le savent pas. Il importe donc au dentiste d'étudier parfaitement chacun de ses patients pour savoir de quelle façon il devra s'y prendre avec chacun d'eux pour recevoir le fruit mérité de son travail.

Le dentiste et l'assistante dentaire

Sans compter les nombreux services que peut rendre l'assistante dentaire au praticien lui-même, il ne faut pas oublier que cette dernière peut avoir une saine influence psychologique sur les individus.

"En effet, l'assistante dentaire peut rendre de multiples services au dentiste. Depuis que les opérations dentaires sont avantageusement faites pendant que le patient est assis sur une chaise spécialement construite dans ce but et depuis que nombre d'opérations demande l'usage d'un équipement qui n'est pas toujours à la main, la dentisterie se pratique maintenant dans des bureaux où l'équipement est installé d'une façon permanente. L'équipement est devenu plus compliqué et les instruments ont augmenté en nombre et en complexité avec le progrès de la science et l'amélioration des techniques. Ceci veut dire que l'administration d'un bureau et la pratique dentaire ne consistent plus seulement dans l'acquisition par le dentiste des connaissances et de l'habileté, mais dans le montage d'un établissement dans lequel une forme spécialisée d'entretien doit être mise en opération. Les appartements doivent être tenus propres et parfaitement aérés. Les instruments et les accessoires doivent être stérilisés et placés en ordre dans les cabinets où il est possible de les retrouver au besoin. Cette responsabilité retombe sur l'assistante dentaire."[7] Et ce n'est là qu'un des nombreux avantages d'avoir une assistante. Nous pourrions énumérer une foule de services que cette dernière peut rendre au cours d'une journée de travail. Ainsi la tâche du dentiste est rendue plus légère et les activités au fauteuil dentaire peuvent se faire avec un minimum de fatigue.

Mais le rôle de l'assistante vis-à-vis des patients est un rôle bien psychologique. Avec une belle façon, avec un beau sou-

rire, l'assistante a toujours une influence merveilleuse sur l'état d'esprit des patients. Ces derniers viennent chez le dentiste avec une certaine crainte, et dès leur arrivée, la réceptionniste qui leur réserve un accueil des plus chaleureux remet vite le sourire sur ces visages à demi angoissés. Le bureau dentaire est un endroit où un service de santé est donné. Et, de la même façon que le nageur se sent davantage en sécurité s'il voit que le surveillant est un robuste spécimen physique, ainsi le patient se sentira plus rassuré pour ce qui concerne la qualité des soins dentaires qui vont lui être donnés, s'il se rend compte que la santé est à l'honneur dans le bureau. L'assistante qui a bonne apparence physique, qui est bien constituée et qui surtout a des belles dents peut aisément contribuer à créer dans le bureau un atmosphère de santé, cet atmosphère de bien-être et de confort que le patient aime à ressentir. Tout au cours de l'opération, des bons mots de l'assistante peuvent apporter un secours très précieux au dentiste. L'opération terminée, celle qui pour ainsi dire a symphatisé avec le patient dans ses inquiétudes, peut également en quelques mots lui faire tout oublier et l'inciter même à revenir. Bref, l'assistante dévouée et fidèle peut en tout temps être du dentiste un bras droit des plus compétents: celui qui a l'occasion d'en retenir les services fait preuve de psychologie et de compréhension, et tout en ménageant un peu sa santé, il rend d'incalculables services à ses semblables dans une profession où, si l'on peut dire, il a su joindre l'utile à l'agréable.

Pour compléter notre tableau, nous allons maintenant essayer de reconstituer et de décrire une journée bien remplie du dentiste. Les patients viennent tour à tour: chacun pose son problème pathologique, chacun pose également au dentiste un problème psychologique souvent très complexe; le praticien a pour tous le comportement qui s'impose, pour l'enfant qui en est encore à ses premières épreuves, comme pour l'adulte qui est dans l'âge où il peut donner le meilleur de lui-même, ou le vieillard qui porte sur son front les marques de la sérénité.

Le dentiste et l'enfant

Les premiers qui rendirent visite au dentiste ce matin-là, furent trois enfants. Ce ne fut pas très long, car le dentiste savait que les enfants ne peuvent être retenus sur le fauteuil dentaire plus *d'une demi-heure.* Il vaut mieux aussi donner des rendez-vous aux enfants *le matin:* ils sont frais et dispos et donnent une meilleure coopération pendant le peu de temps qu'ils sont au bureau. Notre dentiste savait bien cela: quelques années d'expérience et aussi les bonnes directives reçues pendant ses études lui avaient inculqué dans l'esprit la conduite à tenir, conduite faite de patience et de bonne compréhension. Un adulte arrive souvent au bureau parce qu'il s'est trouvé mal servi dans un autre bureau. Mais un enfant, la plupart du temps, s'il est satisfait, est notre meilleur ambassadeur, et si ses premières expériences sont bonnes, il en sera enchanté et tout son entourage connaîtra son enchantement. Voilà pourquoi, le dentiste, ce matin-là attacha une très grande importance à ces trois premiers rendez-vous de la journée.

Le premier à passer, était bien raisonnable, et c'était là le résultat d'une bonne éducation dentaire. Celui-là ne pleure plus, ne questionne plus. Le dentiste, pour travailler plus à son aise, lui donna quelques gouttes d'anesthésie et en quelques minutes, il a fini de faire deux obturations en argent. Et voilà, celui-là a un certain orgueil maintenant de pouvoir venir seul chez le dentiste sans être accompagné de ses parents; et à son petit camarade qu'il rencontre sur le trottoir, il est fier de dire: "Je viens de chez mon dentiste."

Le second, cependant, ne fut pas si commode! Peut-être était-ce le résultat d'une mauvaise expérience précédente, mais toujours est-il que le dentiste eut beaucoup de peine à le persuader de s'ouvrir la bouche. Par deux fois même, il dut inviter la jeune maman à ne pas rester

dans la salle d'opération. Inutile de dire que celui-là n'avait aucune obturation présente dans sa bouche, mais que toutes ses petites molaires et même une grosse molaire permanente étaient plutôt mures pour l'extraction. Faisant appel à son bon jugement, le dentiste crût bon que le travail se ferait le lendemain sous une légère anesthésie générale. Et comme de fait, l'enfant revint le lendemain, à jeun, le dentiste put facilement faire les extractions et avec son esprit conservateur, il n'eût pas de difficulté à faire sur la grosse molaire permanente tout avariée une bonne pulpotomie. A son réveil, le garçonnet sourit, et ce fut là le genre d'armistice qui mit fin pour toujours à l'état d'esprit hostile de l'enfant vis-à-vis "son dentiste".

Enfin la troisième était une toute petite fillette de quatre ans et demi. C'était sa première visite: le dentiste n'hésita pas à lui montrer tous les coins de son bureau, lui expliquant le pourquoi de tout ce qu'elle voyait. Elle reçût même du dentiste un petit cadeau et en guise de remerciement, elle lui déclama son petit boniment. Et l'histoire nous dit que cette fillette revint quelques jours plus tard pour un autre rendez-vous, et qu'elle était toute heureuse d'apporter sa petite collaboration au dentiste. Il n'y a pas de doute qu'elle sera longtemps une cliente satisfaite et assidue.

Il faut donc comprendre que les enfants doivent recevoir toute l'attention qu'ils méritent, et que ceci faisant, le dentiste se prépare une carrière des plus heureuses. "La psychologie de l'enfant est une étude séparée de la philosophie, et il est impossible de fixer d'avance des règles de conduite aux dentistes et aux futurs dentistes. Après que le dentiste a appris à se bien conduire lui-même, à être patient et rempli d'initiative, la psychologie de l'enfant deviendra intéressante et salutaire."[8]

Le dentiste et l'adulte

Après que les trois enfants eurent quitté le bureau, le dentiste avait encore dans son livre de rendez-vous pour l'avant-midi, deux grandes personnes. Elles étaient toutes deux fidèles à l'heure convenue. Le dentiste n'eut aucune difficulté à faire son travail de dentisterie opératoire. Ce sont deux patients, pas nerveux du tout, qui comprennent facilement l'importance de faire une visite régulière à leur dentiste et cette visite est devenue pour eux une routine. Ils ont confiance en leur opérateur et ce dernier est tout heureux de pouvoir finir la matinée sur une note gaie et encourageante.

L'après-midi cependant lui réservait quelques surprises, et le dentiste dut faire appel à sa patience, à son grand esprit de persuasion. Parmi tous ceux qui lui rendirent visite quelques-uns lui donnèrent de la difficulté, et il y avait de quoi: l'un d'eux s'amena dans l'intention de se faire confectionner des pièces de prothèse, et même avant que le dentiste ne commence son travail, le patient avait déjà des doutes quant au résultat espéré. C'était un patient *douteux, suspicieux* à l'extrême et comme tous ses collègues, le dentiste eut beaucoup de difficulté à le convaincre, même après lui avoir dit que le pronostic dans son cas était excellent. En effet, ses gencives étaient en parfait état, la rétention était suffisante, la résorption était très légère, et techniquement parlant le dentiste pouvait espérer un résultat épatant. Mais l'état d'esprit de son patient n'était pas aussi épatant. Tout de même, le dentiste fit si bien qu'il réussit à prendre des radiographies, et par dessus tout, à lui enlever deux petits bouts de racines qui laissaient déjà voir une petite zone d'infection. La victoire appartenait donc au plus psychologue des deux.

Il ne restait plus que trois patients dans la salle d'attente. L'assistante fit passer la première: c'était une femme qui venait faire une courte visite pour donner son appréciation au sujet des deux pièces de prothèse qu'elle portait depuis quatre jours. Le dentiste la vit venir sans inquiétude parce qu'il la reconnaissait pour une de ses patientes *confiantes* pour qui le dentiste n'a jamais tort. Il était certain

à l'avance que même s'il y avait quelque-chose de défectueux, cette dame en reporterait la cause sur elle-même, sur l'état de ses gencives, et non pas sur son dentiste. Il eût la joie de constater que sa patiente ne se plaignait d'aucun trouble, que l'esthétique était parfaitement conservé et qu'en somme son travail avait été des mieux réussis.

La patiente suivante n'était pas aussi commode. A l'aspect de son visage, le dentiste s'aperçût qu'elle devait être *angoissée* au moins depuis une semaine. Son histoire de cas révéla la cause de cette angoisse: elle avait l'impression qu'elle aurait à se faire enlever une belle centrale supérieure qui lui causait des douleurs depuis trois jours. Dès le début, le dentiste jugea bon de lui administrer un petit sédatif; puis sa patiente parla, parla, parla. Son travail ne lui permettait pas de rester sans dent une seule demi-journée; elle craignait qu'une restauration laisse quelque trace d'or quelque part; elle ne voulait pas voir ni l'aiguille, ni le davier, et quand elle eût causé davantage, le dentiste se rendit compte que certains troubles psychiques tout à fait extrinsèques au coté dentaire s'ajoutaient à toute cette histoire. Le dentiste calme et rassurant lui proposa de conserver sa dent par un traitement d'endodontie: sa radiographie montrait en effet une légère infection periapicale. La patiente ne souffla plus mot de l'aiguille, elle endura facilement l'injection et ce fut la première des quatre séances d'un traitement d'endodontie qui grâce à la compréhension du dentiste se termina avec satisfaction.

Enfin, le dernier à se présenter est un grand homme maigre dans la quarantaine. Depuis plusieurs années, ce bon monsieur travaille de bon matin jusqu'au soir dans une patisserie, et le manque d'hygiène buccale aidant peut-être un peu, sa bouche est devenue dans un état lamentable. Aujourd'hui, il a décidé de faire traiter ses dents. Le fait est que plusieurs d'entre elles iront à la chirurgie, que d'autres devront être réparées, et que de nombre de sacs devront être curettés pour permettre aux gencives de reprendre leur état physiologique normal. Avec tout cela, ce même monsieur a des troubles psychosomatiques tant à la firme où il travaille qu'à la maison le soir avec sa femme et ses enfants. Des expériences précédentes lui ont appris que son sang est très "clair," selon sa propre expression, et que le moindre blessure peut saigner des jours et des semaines; c'est un patient excessivement nerveux, d'une *hypertension nerveuse* à nul autre pareille, et le dentiste s'en rend compte facilement en le voyant parler non seulement avec sa langue, mais aussi avec ses mains et tout son corps. Le dentiste doit faire face à cette situation; il décide que son patient sera d'abord préparé pour éviter les hémorragies au cours des extractions; il décide également que toutes ces opérations, sauf la chirurgie qui se fera sous anesthésie générale, seront faites avec l'analgésie.

"Les patients qui reçoivent le plus de confort de l'analgésie sont les nerveux, les hypertensifs, qui craignent, qui se font de la bile à la pensée de l'engin dentaire et de l'excavateur, et qui souffrent plus d'une angoisse mentale que la douleur qu'ils ressentent entretemps. (In these individuals analgesia seems to retard the nervous system's recognition of impulses and to place the patient in a comfortable 'don't care' state of mind.) Les opérations qui se font avantageusement avec l'analgésie sont la préparation des cavités dans une dentine hypersensible, la préparation des racines pour l'adaptation des couronnes et des ponts, le curettage des sacs dans les cas avancés d'alvéoloclasie, etc. L'analgésie n'engourdira pas suffisamment la douleur pour permettre des ablations de pulpe, des extractions de dents, ou le lancement des abcès, qui se font sous anesthésie générale; mais l'analgésie procure une valve de sureté pour le patient très nerveux: elle est un bienfait et un confort."[9]

Conclusion

Et voilà, la journée du dentiste vient de se terminer; elle ressemble à toutes

les autres en ce sens qu'elle a été elle aussi consacrée entièrement au service de la pathologie, au service de la santé du public. Le dentiste exerce sa science dans un champ opératoire par où nombre de malaises, d'infections peuvent avoir accès. Le praticien doit donc réaliser tout ce dont il a la garde et agir en conséquence. En fait, la bouche a quelquechose de sacré pour tous et chacun.

"Du point de vue psychosomatique, la bouche est probablement l'organe le plus important du corps humain. Les lèvres de l'enfant sont les premières à venir en contact avec le sein de sa mère qui lui procure ce premier sentiment de sécurité contre la faim et l'inanition. La chaleur profondément radiante de ce premier contact a une profonde impression psychique sur la vie de l'enfant en tant qu'il se sent instinctivement protégé contre tout assaut corporel, dans un état de confort et de bonheur. Les dents temporaires de l'enfant deviennent les premiers organes de trituration et de mastication de la nourriture dans sa préparation pour la digestion et l'assimilation. Les dents servent aussi quelquefois pour mordre — tel un moyen d'attaque et de défense personnelle dans la lutte de l'enfant pour sa propre préservation. La bouche et les dents sont les organes au moyen desquels les premiers sentiments de bonheur et de joie, de rage et de tristesse peuvent être exprimés; les chants et les rires, les pleurs et les malédictions émanent de la bouche humaine. La bouche est l'organe qui exprime dans le baiser les sentiments les plus sacrés de l'amour et du dévouement humain. La bouche humaine réflète comme un miroir toutes les manifestations de l'esprit humain. C'est par la bouche que l'humanité a exprimé ses plus grands évangiles, et c'est de la même façon que les plus grandes calamités et malédictions pour la race humaine ont été exprimées. La passion et l'amour, l'orgueil et l'humilité, la douceur et la fureur, la beauté et la laideur trouvent leur expression grâce à la bouche humaine. Mantegazza, un grand anthropologiste s'exprimait ainsi: 'C'est une déficience dans la beauté que d'avoir de mauvaises dents; c'est comme une tache sur le soleil. Depuis que l'hygiène de la bouche est en même temps l'hygiène de la beauté, *les bons dentistes* méritent une statue d'or ou au moins une place d'honneur parmi les bienfaiteurs de l'humanité. Les plus belles dents ne suffisent pas pour donner à l'homme la beauté, mais de mauvaises dents souilleraient la beauté de la Vénus de Milo elle-même.' "[10]

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A propos de l'éruption de la dent

par G. NICOLAS (Genève)

S'il est un fait aisé à observer dans la bouche d'un enfant, c'est bien celui de l'éruption d'une dent. Mais malgré toutes ces observations, le processus nous échappe encore et si de nombreuses théories ont été émises, aucune ne donne vraiment satisfaction.

Démolis de Genève, dans un travail autrefois sur ce thème, citait Hunter, Magitot, Nasmyth, Kölliker, etc. qui admettaient *la théorie radiculaire*. La racine disait-on, en croissant, appuierait sur le fond de l'alvéole qui servirait d'escabeau pour soulever la couronne. Inutile de montrer ce qu'il y a de fallacieux dans cette explication. En effet, on constate souvent que des dents croissent encore, alors que des racines ont terminé leur évolution; bien plus, le chemin parcouru par la dent est plus grand que celui représenté par la croissance de la racine.

On a évoqué *une théorie pulpaire* à laquelle se rattachent Zuckerkandl, Eichler, etc. qui voudraient que ce soit le tissu pulpaire qui, en croissant sous le bourgeon dentaire ouvert, pousserait la couronne et faciliterait son éruption.

Baume et Wedl admettent que *la moelle osseuse*, ainsi que le périoste, prennent part à la résorption de la dent de lait.

Robin n'a-t-il pas supposé que l'alvéole serait contractile et que *des pressions musculaires* pourraient provoquer l'éruption? Pourtant nous ne croyons pas à un effet mécanique seul; bien d'autres facteurs dont plusieurs nous échappent, doivent entrer aussi en ligne de compte, autrement, avec cette théorie nous aurions peine à comprendre l'éruption palatinale d'une canine.

On sait par exemple qu'une éruption précoce de dent de lait peut être due à *une stimulation hormonale*. Le thymus, la thyroide, les gonades ont souvent été évoqués.

Mais on n'ignore pas non plus (Abels) que lors d'un état fébrile, une stimulation de l'éruption se fait, sans que jusqu'alors on ait pu expliquer le phénomène. De même, une pyrexis gravidarum (Cohn et Rector) a un effet stimulant certain sur la dentition du foetus. Ne pourrait-on pas évoquer à ce sujet une influence hypophysaire, ou mieux cortico-surrénalienne?

Quoi qu'il en soit, on constate des retards d'éruption dans de l'hypogonadisme associé éventuellement à de l'hypopituitarisme, dans le crétinisme, le myxoedème infantile, etc.

Aichel et Weidenreich ont cru pouvoir faire intervenir *la pression osmotique* qui régit les divisions cellulaires et pousserait vers l'extérieur le follicule dentaire, à condition bien entendu que cette pression ne s'exerce que dans une direction.

Kantorowicz fait *un complexe des théories précédentes*, mais où aucun facteur ne jouerait le rôle principal. Cependant sa grande erreur est de ne faire aucune différence entre l'éruption de la dent de lait et celle de la dent permanente. Or, si les effets mécaniques sont capables de provoquer des résorptions au-dessus du bourgeon, il faut reconnaître que nous assistons parfois à des résorptions de dents de lait sans présence d'une permanente. Il est vrai qu'il s'agit dans ce cas souvent, de processus tardifs.

Faudrait-il, comme certains auteurs le pensent, voir *une tendance héréditaire du maxillaire* conduisant à une résorption? A vrai dire, tout cela paraît bien obscur et nous fait songer aux greffes dentaires sur lesquelles on trouve des phénomènes de résorption parfois dus à des forces mécaniques, bien que souvent, comme c'est le cas des implants, il soit recommandé, pour qu'il y ait réussite, de les mettre immédiatement en fonction après leur insertion.

Autrefois, nous avons pratiqué maintes réimplantations de dents et maintenant, nous avons l'occasion de voir bien des radios d'implants. Même lorsqu'il y a réussite, on constate autour de certaines dents des halos, signes de résorptions incontestables, mais qui ne sont comparables en rien avec ce qui se passe sur les racines des dents de lait. Nous ajouterons, comme chacun a pu le constater, que des débris de racines de dents peuvent soit se résorber et faciliter leur extraction, soit s'éburner et conserver leur fixité, sans que nous puissions comprendre la raison totale de ces différences.

Une idée intéressante est celle de Eichler, pour qui le facteur le plus puissant est l'organe de résorption de Tome, dont le tissu composé de cellules multinucléaires serait semblable aux cellules mésenchymateuses de Kolliker.

D'après les recherches de Reichborn, il s'agirait du tissu interradiculaire présentant l'apparence d'un tissu de granulation et qui serait résorbé de la même façon que l'os, par des effets mécaniques et des troubles circulatoires.

Von Metnitz fait observer que l'on voit souvent sur les dents de lait extraites en cours de résorption, un tissu mou, rougeâtre, siégeant dans la concavité résorbée et que l'on pourrait, même à l'oeil nu, considérer comme un tissu de granulation ulcéreuse. Si l'on enlève ce tissu, on trouve sur la racine, une surface rugueuse, creusée de sillons fins et entourée de pointes plus ou moins longues.

Au microscope, ces sillons ou fossettes présentent une grande analogie avec les lacunes de Howship, qui se rencontrent lors de résorptions osseuses. Elles sont remplies de cellules géantes polynucléaires entre lesquelles on constate de nombreux vaisseaux. Von Metnitz insiste sur la présence de longs tractus de tissu conjonctif fibrillaire néoformé, que l'on peut suivre, à travers les pores de l'alvéole jusque dans la moelle osseuse. En de nombreux endroits, les lacunes de la résorption sont comblées avec du cément, qui de son côté présente déjà des symptômes de résorption à des degrés divers. On assiste ainsi à une certaine périodicité de phénomènes, appositions-résorptions, qui se recontrent dans d'autres processus de destruction: telles des périodontites productives. Là, en tout cas, cette néoformation de cément semble jouer un rôle lors de la fonte du cément radiculaire.

Reichborn constate avec de nombreuses préparations histologiques, que par les tissus néoformés au-dessus et au-dessous de la pulpe, tout le follicule est poussé en direction occlusale. Il en est de même de la couronne par suite de la croissance de la racine. Mais, si en même temps que la croissance de la racine, l'os se résorbe au-dessus et au-dessous de la pulpe, cette racine peut croître sans que le sac folliculaire change de position.

Cependant un récent travail de Wasserfaller montre qu'au cours de leur croissance, les follicules dentaires présentent des déplacements liés aux phénomènes généraux du développement de la mandibule. Certains auteurs (Schwarz de Vienne) ont même montré que la dent ne faisait pas éruption selon une verticale ou une oblique, mais selon une courbe plus ou moins hélicoïde.

Quoi qu'il en soit, lors de la croissance des permanentes et de leur éruption, des phénomènes d'ostéogénèse et d'ostéolyse dans les os parodontaires et sur les dents de lait jouent un rôle prépondérant. De plus, les effets mécaniques précédemment cités peuvent aussi être à l'origine de troubles circulatoires, de suffusions sanguines amenant une destruction ostéoclastique. En effet, tout le tissu paradontaire, du fait des forces mécaniques est remplacé par un tissu sans consistance, dans lequel on trouve des vaisseaux élargis, hyperémiés, des hémorragies qui ne sont autres que des ectasies de vaisseaux. Par hypérémie, la circulation sanguine du tissu osseux peut remplacer le tissu graisseux par des fibres médullaires; cette hyperémie conduit à une hémorragie, d'où un oedème chronique et par irritation, une résorption tissulaire.

Songeons que les parois des veines sont

très minces, que la circulation est lente et la pression minime (Langers). D'autre part, (Arnold) la moelle est pauvre en lymphatiques et de ce fait, peu encline à réagir contre les troubles circulatoires.

Recklinghausen avait déjà montré que les vaisseaux artériels et veineux passent dans le même trou osseux de telle façon qu'une hypérémie artérielle amène une compression de la veine. Haupl et Lang, étudiant la genèse de l'ostitis fibrosa constatèrent que ce phénomène était bien réel.

Nous avons cité le travail de Wasserfaller. Il convient de se rappeler que lors de l'éruption, on assiste à une flexion du maxillaire inférieur au voisinage de la première molaire où un espace se crée qui sera comblé par du tissu osseux. Cette flexion amène une poussée mésiale, augmentée encore, du fait qu'en général les prémolaires sont plus étroites que les molaires de lait et ceci jusqu'à ce que le contact s'établisse.

Une expérience intéressante en ce domaine est celle réalisée par Andresen montrant la valeur non négligeable de l'effet fonctionnel. Sur un demi-maxillaire où les dents de lait étaient restées, les permanentes se sont trouvées mieux développées et mieux calcifiées que sur l'autre moitié où elles avaient été extraites.

Signalons aussi l'effet des produits toxiques ou chimiques sur l'éruption de la dent. Rappelons que le professeur Bamatter, le premier en Europe, a signalé des cas d'embryopathies dues à des rubéoles, mais qu'il dut convenir par la suite que d'autres virus, d'autres toxiques pouvaient avoir une influence sur le développement de certaines parties de l'enfant.

Töndury, par des coupes microscopiques remarquables, a pu constater ce que nous avions déjà signalé, à savoir qu'une embryopathie peut avoir aussi ses répercussions sur le système dentaire.

Que l'effort mécanique joue un rôle important, nul n'oserait le nier, surtout après les travaux de Geppert et de Muller sur l'apposition du cément permettant de mesurer la force masticatrice sur la dent examinée.

Mais qu'un grand nombre d'autres facteurs entrent en jeu dans ce processus de l'éruption, nul ne pourrait le contester.

Médecine et Hygiène

Armand Porcheron, S.J., D.D.S.

Le R. P. Armand Porcheron, S.J., D.D.S., est décédé à l'âge de soixante-et-quatorze ans, dimanche, le quatre novembre 1956, à l'Hôtel-Dieu de Montréal.

A la suite d'études classiques, il s'inscrivit à l'Ecole de chirurgie dentaire de Montréal et, après les examens requis, il reçut, en 1906, le parchemin de docteur en chirurgie dentaire (D.D.S.) cum laude de l'Université Laval et une licence du Collège des Chirurgiens-Dentistes de la province de Québec. De cette promotion, la première de l'Université Laval, seul, le docteur Léon Archambault fait encore de la pratique active.

Sa décision prise de devenir ministre de Dieu, en 1912, il abandonna la profession qu'il exerçait depuis six ans et entra au noviciat des Jésuites, au Sault-au-Récollet, près de Montréal. Sa probation et les études régulières de la Compagnie de Jésus terminées, il enseigna les sciences de 1917 à 1920 au Collège Sainte-Marie, son Alma Mater. Ordonné prêtre, il vécut quelques années en Belgique et, en 1924, revenu au pays, il avait son obédience pour exercer son ministère dans la paroisse de l'Immaculée-Conception jusqu'à sa mort.

Sa qualité dominante fut l'humilité. Au collège, à l'Université, à la communauté il s'efforça, sans jamais se dementir, d'être ignoré de tous: c'est pourquoi ses supérieurs, malgré un dévouement sans borne, ont semblé l'oublier.

Le rédacteur du Journal de l'Association dentaire canadienne, au mois de juillet 1938, écrivait qu'il était convaincu que quatre chirurgiens-dentistes canadiens avaient été ordonnés prêtres. Les noms du R. P. William-Ernest Cummer C.S.B., D.D.S., du R. P. Armand Porcheron S.J., D.D.S., me sont connus, mais j'ignore les noms des autres.

Paul-E. Poitras D.D.S.

REVUE DES REVUES

H.-H. STONES, F.-E. LAWTON.—**Education dentaire en Grande-Bretagne.**

Les seize écoles dentaires du Royaume-Uni, toutes rattachées directement à une Université sont équipées pour recevoir un maximum d'environ 635 nouveaux étudiants chaque année. Le nombre réel d'admissions au cours des cinq dernières années s'est avéré bien inférieur à ce maximum, mais après avoir atteint son plus faible niveau en 1954, avec 467 nouveaux étudiants, a accusé un accroissement.

Même si les écoles fonctionnaient à plein, le nombre d'étudiants diplômés serait insuffisant pour satisfaire complètement aux besoins de la nation en dentistes. Le Gouvernement a constitué un Comité interdépartemental aux fins de rechercher les raisons de ce manque de candidatures pour la profession dentaire.

Les conditions préliminaires au point de vue culture pour l'admission à une école dentaire sont basées sur la réussite aux examens du certificat général d'éducation ou à son équivalent. Les candidats qui ont satisfait aux conditions de culture sont interrogés par un Comité d'admission qui dispose de rapports confidentiels établis par les Directeurs de leurs écoles.

Deux diplômes, le Baccalauréat en Chirurgie Dentaire et la Licence de Chirurgie Dentaire justifient l'inscription au "Registre des Dentistes". Il se manifeste une tendance dans les Universités à éliminer la licence et à n'accepter de candidats que pour les cours du Baccalauréat.

Le programme des cours a été modifié pour faire porter l'accent sur l'aspect biologique de la dentisterie et non plus sur le côté mécanique. La réorganisation des différents sujets a été rendue possible par la révision, en 1953, des recommandations du General Medical Council. Le temps accordé au côté mécanique dentaire a été ramené de 2.000 à 800 heures et est plus étroitement lié à la prothèse clinique. Le nombre des professeurs à temps complet a été augmenté, des professeurs à mi-temps sont cependant admis. La rémunération des professeurs a été augmentée, de manière à la rapprocher du gain moyen fourni par la pratique courante de l'art dentaire.

Il existe de plus en plus de Cours de Perfectionnement et des bourses, pour la poursuite d'études supérieures, sont offertes par des donateurs variés.

On se consacre plus activement à la recherche dans les Ecoles dentaires et un nouveau département de recherches des sciences de base vient d'être constitué par le Collège Royal des Chirurgiens d'Angleterre.

Les assistantes dentaires sont formées dans certaines écoles où elles s'entraînent en assistant les étudiants en art dentaire. Cette pratique tend à se répandre.

D'autre part, les mécaniciens-dentistes sont formés par un apprentissage auprès d'un praticien, doublés de cours théoriques donnés par les collèges techniques dans les centres les plus importants. (*International Dental Journal*, No 3, septembre 1956, pp. 416-420).

A. CHATTAS.—**L'état de nos connaissances sur le métabolisme du calcium et du phosphore.**

Le calcium et le phosphore sont indispensables à l'homme pour la formation des os et des dents, dont ils sont les principaux constituants. La presque totalité de la quantité de calcium contenue dans le corps humain (90%), est localisée dans le squelette, sous forme de phosphates et de carbonates. Pour ce qui est du phosphore, 70% du contenu total de l'organisme sont combinés avec le calcium, dans les os. De petites quantités de ces deux minéraux, sont présentes dans la circulation ou dans les espaces intercellulaires. Le calcium et le phosphore sont fournis à l'organisme par l'alimentation, ils passent à travers le tractus digestif dans le sérum du sang, après quoi, ils sont prêts à être absorbés par les os et les dents.

Les périodes de la vie au cours desquelles la demande et la consommation de ces deux corps est la plus forte, sont la vie intra-utérine pour la formation et la calcification des dents temporaires et la première enfance pour les dents permanentes. Un régime alimentaire bien équilibré, formé prin-

cipalement de lait et de ses produits, d'oeufs, végétaux frais et céréales, apporte à l'enfant la quantité nécessaire de ces minéraux. Il maintient le Ca et le Ph dans le sérum des enfants normaux à un niveau constant et prêts à être absorbés par les dents. Leur métabolisme dépend du régime de la mère durant la grossesse et de la santé de l'enfant. Les troubles de ce métabolisme chez la femme enceinte, réagissent sur la calcification et la formation normale des dents du foetus. De même, les troubles du système métabolique au cours de l'alimentation au sein et de la première enfance, ont pour effet une déficience de la calcification des dents.

Le dépôt de sels minéraux dans la matrice pendant la formation et la calcification des dents, se fait en plusieurs stades. L'émail et la dentine sont extrêmement sensibles aux modifications métaboliques des tissus pendant leur formation. Tout changement du métabolisme survenant pendant la précipitation des sels minéraux dans la matrice, provoquent des lésions des cellules de l'émail et de la dentine. Ces lésions se traduisent plus tard par un émail d'aspect friable ou hypoplasique et de la dentine interglobulaire.

La calcification prénatale des dents se manifeste sur l'émail des enfants par l'anneau néonatal. L'anneau de la première enfance, qui se forme vers l'âge d'un an, traduit la calcification postnatale. Pendant la première année, les infections sont fréquentes et la calcification des dents est défectueuse. Entre 12 et 30 mois, la calcification s'améliore. Elle redevient mauvaise entre 2 ans ½ et 5 ans. Pendant ces périodes, une surveillance s'impose, pour éviter la décalcification par un régime alimentaire approprié.

L'étude à laquelle l'auteur s'est livré, du métabolisme du magnésium et du strontium, facilite la compréhension des relations étiologiques entre les troubles du métabolisme du Ca et du Ph et la calcification imparfaite des dents. L'étude des phosphatases donne une idée claire du rôle joué par un régime bien équilibré dans la prévention des maladies ostéo-dentaires et de la calcification déficiente qui prédispose à la carie. (*Rev. Odont. Argentina*, novembre 1955.—*Dent. Abstr.*, août (1956).

E. MULLER.—**La dentisterie sociale en Allemagne.**

La dentisterie sociale est un ensemble de dispositions relatives à la santé publique en vue de prévenir et de traiter les affections des dents, de la bouche et des mâchoires de la population. Elle comprend des plans d'hygiène sociale. Les facteurs de dentisterie sociale en Allemagne sont les assurances sociales et les soins dentaires infantiles. L'assurance sociale maladie a grandement aidé le développement de la dentisterie en Allemagne en raison de sa structure et de ses mesures qui ont permis de mettre les soins dentaires à la disposition de la population tout entière. Il n'y a que 40 ans seulement que les traitements de conservation font partie des services dentaires de l'assurance maladie au même titre que les traitements chirurgicaux. Les traitements prothétiques et orthodontiques constituent des services supplémentaires de l'assurance maladie dont le coût est subventionné.

Il n'y a que deux décades que les relations entre les dentistes et les Caisses d'assurances sociales ont été légalement réglementées. Le dentiste n'a pas de contrat individuel avec celles-ci; c'est l'organisation dentaire qui est responsable des soins donnés aux assurés. L'assuré est libre de choisir son dentiste parmi ceux habilités à prodiguer leurs soins. Tous les dentistes ne sont pas habilités à traiter les assurés, qui représentent 80% de la population. Les conditions d'admission à l'assurance sont réglementées. Il n'y a pas d'échelle fixe d'honoraires pour soins dentaires: les Caisses d'assurances paient généralement un honoraire fixe par tête et, seulement dans une faible proportion des cas, des contrats assurent des honoraires pour traitements spéciaux. L'échelle des honoraires pour traitement est très ancienne et pécuniairement insuffisante. Dans le cas de différends, un processus légal d'arbitrage est mis automatiquement en oeuvre: ce qui exclut les rapports contractuels.

Le montant de l'investissement de l'assurance sociale attribué aux services dentaires est insuffisant. Ce qui a pour résultat, au lieu de permettre un traitement précoce, de ne donner de soins à l'affection que lorsqu'elle se trouve à un stade déjà avancé.

La plus grande autorité de l'autonomie du corps de Dentistes et des organisations d'assurances maladie est un Bureau Fédéral qui pose les termes de référence des soins aux assurés. La question de la contribution des assurés, au coût du traitement dentaire, reste un point controversé. Les Dentistes, par opposition aux praticiens du corps médical, considèrent une telle mesure comme indésirable, car elle pourrait faire obstacle à la recherche des soins précoces. Il est suggéré d'établir

une différenciation entre les diverses catégories de traitements, afin que ceux qui se soumettent régulièrement à des examens systématiques soient plus largement pris en charge que ceux qui sont négligents.

Les traitements radiculaires constituent un grand problème de la dentisterie sociale. L'opinion allemande est opposée à une solution aussi radicale que le rejet total de tout traitement radiculaire.

Une attention spéciale est apportée à l'orthodontie bien que la main-d'oeuvre disponible à cet égard soit insuffisante à satisfaire la demande.

L'Allemagne est actuellement en train de développer le service dentaire assuré par les écoles depuis plusieurs dizaines d'années, en vue d'assurer les soins aux enfants âgés de 3 à 18 ans. Les bases légales de ce projet sont actuellement à l'étude. L'organisation systématique des soins dentaires infantiles ne comporterait que des examens, des conseils et une action morale: il n'est pas envisagé de traitement obligatoire.

Les examens et les soins postopératoires devraient être, en règle générale, du ressort des Dentistes à temps plein ou à mi-temps, en matière de dentisterie infantile. L'application du traitement appartiendrait au Dentiste traitant.

La mise en oeuvre d'un système de soins dentaires infantiles ainsi que d'une nouvelle organisation de l'assurance sociale, constituent les bases préalables en vue d'une amélioration des conditions dentaires extrêmement mauvaises de la population allemande et du succès de la dentisterie sociale. (*International Dental Journal*, No 3, septembre 1956, pp. 323-339).

M. GUTHERZ.—**L'organisation des soins dentaires scolaires en Suisse.**

Alors que les autres pays rendaient possible un traitement approprié des écoliers grâce à une socialisation étendue de la profession, la Suisse, vu sa structure fédéraliste et les moyens dont elle dispose, a choisi diverses méthodes permettant d'obtenir les meilleurs résultats dans les communes et les cantons. Le système le plus répandu est celui des médecins-dentistes qui soignent les écoliers dans leur propre cabinet dentaire; 585 dentistes privés assurent les soins dentaires scolaires dans 1.092 communes représentant 190.000 enfants environ. Dans les villes et les grandes cités de la plaine suisse existent, par contre, 40 cliniques dentaires scolaires stables, occupant 81 médecins-dentistes (le plus souvent fonctionnarisés) soignant 120.000 enfants de 177 municipalités. Quelques cantons comptant plusieurs petits groupements humains ont créé des cliniques ambulantes; huit de celles-ci, dirigées par des dentistes, peuvent traiter 10.000 enfants d'environ 120 communes.

Sur les 500.000 écoliers suisses, 320.000 reçoivent des soins dentaires scolaires; 80.000 sont traités par les médecins-dentistes privés. C'est-à-dire que 400.000 enfants, soit le 80%, ont la possibilité de recevoir des soins dentaires. Les 100.000 enfants restants sont examinés 1-2 fois par an par les dentistes scolaires, de sorte que, pour eux, le contrôle plus ou moins effectif de l'état dentaire peut être pris en considération. Il faut espérer que pour cette partie des enfants des écoles, le chemin et les moyens seront trouvés pour leur assurer aussi des soins dentaires réguliers. (*Revue Mensuelle Suisse d'Odontologie*, No 5, mai 1956, pp. 482-491).

L'Information Dentaire, 13 décembre 1956—

Volume 23
Number 3
Toronto
March 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

The Dentist's Responsibilities to His Community, His Practice and to Himself*

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The professional label is a noble mark of distinction shared by those who are allied in the dental profession. If by accident or design that label is marred, everyone suffers the effect. As the *Principles of Ethics* [1] of the American Dental Association point out, "the practice of dentistry first achieved the stature of a profession in the United States, where, through the heritage bestowed by the efforts of many generations of dentists, it acquired the three unfailing characteristics of a profession: education beyond the usual level, the primary duty of service to the public, and the right to self government.

For every benefit which we are privileged to enjoy there is a parallel responsibility. The genuine willingness with which we accept our professional responsibilities has a vital effect upon the community we serve, the patient and the dentist. If these responsibilities are not clearly recognized, and willingly assumed, we have little right to expect the spiritual and material rewards commonly enjoyed by the truly dedicated professional man.

It is both fitting and proper that we draw a distinct line between the trades and the professions, lest, by our actions we indulge in practices which threaten to weaken or destroy the dignity of the profession. W. H. P. Faunce, past president of Brown University [2], speaking before the Rhode Island Medical Society

*Delivered before the Academy of Dentistry, Toronto, January 24, 1957
**Temple University School of Dentistry.

drew a sharp contrast when he said, "Trade is occupation for livelihood; profession is occupation for joy in the process. Trade is occupation where anybody may enter; profession is occupation where only those who are prepared may enter. Trade is occupation taken up temporarily until something better offers; profession is occupation with which one is identified for life. Trade makes one the rival of every other trader; profession makes one the co-operator with all his colleagues. Trade knows only the ethics of success; profession is bound by lasting ties of sacred honor."

The inherrent difference then between a profession and a trade is that the former gives and the latter takes. This philosophy is as old as the profession itself. It is a philosophy which at times is forgotten by the older practitioner, and in some instances never fully understood by the young dental graduate.

A major responsibility to community, is that of insuring a steady flow of qualified dental personnel. Young men, whose basic concepts are sound, and whose moral principles will stand the acid test. Men who will be a credit to the profession, who are inspired to give full measure of dedicated professional service to the public which they are privileged to serve. You and I must share in the responsibility of choosing the right kind of men.

Social and economic changes within the past quarter century have confronted the profession with new problems, one of which has been an ever increasing request for an expansion of dental health services.

The ability to produce dental health care has, in some sections of the country just about reached capacity. What is the solution?"

1. A more determined dental research program in order to become better acquainted with the causes, effects and prevention of dental disease.
2. A sufficient expansion of dental educational facilities to maintain an equitable dentist-patient ratio.
3. More extensive use of auxiliary personnel.
4. A serious study of existing facilities to determine whether time, motion, and personnel are used most efficiently.

The past decade has produced advances in each of the four areas but we have a long way to go to reach a satisfactory level.

What about dental health education? Does the public really appreciate the value of sound dental health as related to the total health of the individual? Unfortunately, many local communities are poorly informed. Good public relations programs cannot sprout and grow in the central office of the National Dental Association. The fertile seed must be planted by the individual dentist, cultivated and nourished by the component and constituent dental societies in order to insure a satisfactory result.

Many communities are desperately in need of leadership to develop, promote and direct dental health care programs designed to stress the importance of prevention, early detection, and treatment of dental disease. Society looks to the professional man to supply this leadership, and when it is forthcoming the citizens of the community willingly join in the efforts. Patients who are smitten with continuing illnesses, and those who fall in the indigent class should be our constant concern.

The chief facilities by which dental health care has been rendered in the past are the private dental office, the hospital, and municipal clinics. There is a growing trend in some sections of the United States to sacrifice a few of the advantages which independent practice offers in exchange for benefits which accrue from group practice. It is reasonable to assume that this trend will continue at a more accelerated pace within the next ten years due largely to the demand for dental health care by organized groups.

Added to the responsibility of meeting the demand for group care will be the problem of defraying the cost. According to Dr. C. A. Kulp,[3] dean of the Wharton

School of Finance and Commerce, University of Pennsylvania, dental disease is an insurable risk once a maintenance level of dental health has been established. Methods must be found to defray the costs of accumulated dental defects before the insurance principal can be applied. Whether it be open panel, or closed panel, pre-payment or post-payment, the dental health service corporation, or the insurance carrier, the profession must become more familiar with the socio-economic trends which dictate a change in the method of providing dental health service in some specific areas, if we expect to share in the development of such programs.

Our goal should be a program designed to accomplish the most good for the greatest number of people. It is the solemn duty of every able bodied professional man to support the effort.

Responsibilities to Patients

To consider the patient's total health, to render the highest quality of service of which we are capable at a fee which is fair and just to the patient and the dentist, this should be our primary objective.

In striving to reach this objective let us ever be mindful of the fact that it can and must be done without loss of dignity to the patient, the dentist or to the profession. The individual practitioner is the most important ambassador of good will for dentistry in the world. The privilege of rendering a personalized health service to the patient carries with it the golden opportunity to do an effective job of patient education at the chair side level. This is where good public relations begins. A refined approach, and an attitude which places service above self will promote confidence, respect and good will.

Professional ability seldom if ever attains maximum capacity without the necessary flux of continuing education. The same may be said about human relations, an area in which the professional man should be proficient.

Road blocks of patient grievances and faulty personal communications should not be permitted to slow our pace, as we travel the road which leads to professional maturity.

Who will deny that there are but few areas in our country today where patients' complaints are handled capably? Wherever patient grievances are observed and recorded, fees, inadequate service and incomplete service head the list in that order. This is not an accident. It is an established pattern.

The proper place to handle a patient's complaint is in the dental office, where most complaints originate. When this method cannot be employed effectively, the dental society should be properly organized to render a valuable assist to mediate unresolved differences. This must be done without bias, lest the patient gain the impression that mediation committees, ethics or censor committees are organized chiefly for the protection of the dentist.

Patient Grievances are likely to occur

1. When the fee for service is out of proportion to its worth.
2. Unless the fee has been justified within the mind of the dentist and the patient.
3. Where the fee charged is for unwanted service.
4. Misrepresenting service, exaggerated claims and guarantees.
5. If patient's ability to pay has not been seriously considered.
6. When value of materials is stressed rather than worth of service.
7. Unless patient is given an opportunity to ease the financial pinch by budget payment, or bank financed plan.
8. When service is rendered to minors without parents' knowledge and agreed consent to cost.
9. By failure to fulfill contract, either in quality, cost or time.
10. Unless contingencies are anticipated, and explained in advance.
11. If previous dental service is criticized or deprecated by look, act, word, or deed.
12. When differences in professional opinion are discussed in the patients' presence.
13. When confidence is lost due to unprofessional conduct.

14. Poor case presentation causing misunderstanding or mis-interpretation.
15. When patients' complaints and requests are too hastily brushed aside.

Though no attempt has been made to exhaust the causes for patient dissatisfaction, if these hazards are not eliminated, the right to self-government, granted to the profession by society, may be seriously theatened.

Responsibilities to one's self

We are all creatures of habit, and one which I strongly recommend is that of self examination. To some, the results will be most gratifying. To others, like myself, the knowledge thus gained will reveal a constant pattern; the need for self improvement. The quality of an examination as related to the profession of dentistry will no doubt be directly related to the basic concepts of each individual.

I become more conscious of my own deficiencies when I review the following questions.

1. Do I respect my fellow man, regardless of his station in life?
2. Have I developed a genuine affection, and a sympathetic understanding for the patient whom I am privileged to serve?
3. Is my attitude toward others one which fosters confidence, respect, and good will?
4. Have I increased proficiency by continued study and learning?
5. Is my time and energy used wisely?
6. Does my daily schedule allow time for physical and mental relaxation?
7. Are the spiritual and material compensations which accrue from practice in proper balance?
8. Have I discharged my obligation to secrecy with honour, and resisted the temptation to gossip?
9. Do I place professional responsibilities above selfish interests?
10. Is my professional competence guided by a charitable conscience?
11. Am I truthful?
12. Has constructive criticism been welcomed, and regarded as a helpful asset?

Henry Van Dyke,[4] 1852-1933, may well have been thinking of our profession when he wrote.

"Four things a man must learn to do
If he would keep his record true
To think without confusion clearly
To love his fellow man sincerely
To act with honest motives purely
To trust in God and Heaven securely."

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He has achieved success who has lived well, laughed often and loved much; who has gained the respect of intelligent men and the love of little children; who has filled his niche and accomplished his task; who has left the world better than he found it, whether by an improved poppy, a perfect poem or a rescued soul; who has never lacked appreciation of earth's beauty or failed to express it; who has looked for the best in others and given the best he had; whose life was an inspiration; whose memory is a benediction.

Mrs. A. J. Stanley.

Ultrasonics in Dentistry—An Evaluation

MARK ZIMMERMAN, D.D.S., Toronto

The great interest evinced by the profession in high-speed, ultra-high-speed (up to 200,000 revolutions per minute), and ultrasonics,[1] is an indication of a need that has been apparent for a considerable time, not only to the dentists, but also to our patients. The nerve-racking noise and vibration of slow-speed cavity preparation has been experienced by us all—and please note that pain is not, in the writer's opinion, the most important consideration.

Cutting hard substances such as tooth enamel and sound dentine, requires the use of abrasion or cutting, by one of three procedures—(a) *Reciprocal action,* as in the use of a file, or sandpaper, on wood, (b) *Rotary action,* which includes cutting by blades (burs), abrasives (sandpaper or similar disks), diamond points and disks, (c) *Throwing of abrasive particles "downward"* on the surface to be cut, by a stream of compressed gas, (sandblast) or by the vibration of a metal tip in a slurry (ultrasonics).

Method (a) is not practical from the viewpoints of accuracy and speed. Method (b) involves heavy vibration at low speeds, danger from "jumping" or "skipping" instruments at all speeds. Method (c) when using the sandblast technique, eliminates the tactile sense, and requires a tiringly high degree of constant, second-by-second watching. The ultrasonic method, as experienced after eighteen months of use in practice, meets a number of requirements and needs, from both operator's and patient's viewpoint. A brief note on the fundamentals of this method will help to clarify consideration of its use.

Ultrasonic cutting of hard substances was discovered by accident some fifteen years ago, and was immediately pressed into service in industry, for the cutting of extremely complicated dies and patterns. As an example of its potentialities, at the last International Trade Fair held in Toronto (1955), the machine demonstrated the cutting in plate glass, of the form seen in Figure 1. There is no other means that could be used to make such a cut, leaving the very fine pins standing, without breaks. The basic principle in ultrasonics, is smoothness of cutting. It is as if one were to press an instrument tip down into a soft substance such as plasticine or butter — the tip would leave its imprint clearly marked. Ultrasonic permits accurate, smooth cutting, without danger of overheating, skipping, "wandering" or jumping of the tip. The operator's tactile sense is used, and it should be pointed out here, that dentists have always relied on this sense of touch, far more than was realized. When we thoughtfully consider our procedure in cavity preparation, we come to the realization that, like the surgeon working in other tissues, we have been relying on the tactile sense to a very great extent.

Although the shape of the ultrasonic tip can determine the exact shape of the cut made, any tip can also be used to establish a variety of modified cavity shapes. For example, as in Figure 2, the blade shaped as in "A" can be ground

(1) The machine used—Cavitron, manufactured by Cavitron Equipment Corporation, Long Island City.

FIGURE 1 — Enlarged view from above, and cross-section, of plate glass, illustrating ultrasonic cutting's smooth action.

slightly to the form as in "B", then used to shape the occlusal portion of a preparation in a bicuspid, by first going straight down through the enamel, then turning the tip from side to side slightly, as indicated by the arrows, about the narrowed part as the axis. A wide-bladed tip can cut a proximal slice, without any problem as with a disk jumping or slipping on to soft tissues. The finest pinhole desired, can be produced quickly and neatly, and the speed of opening up developmental pits and fissures, will appeal to every operator. Our evaluation at this point is, that ultrasonics greatly reduces the strain dentists are subjected to in our work. The only other point one should be concerned about, is the question of damage to pulpal tissues. The electronics engineer who sat in the dental chair recently, laughed when asked about the dangers of high-speed vibrations.

"The ultrasonic tip vibrates *only* (!) 29,000 times per second," he said. "In my work we deal with vibrations up to millions per second, and the people who work with these vibrations do not suffer damage of any kind; why should the teeth?"

The fact is that the early reports presented, showing damage to soft tissues, were based on work done with guinea-pigs' teeth, which are quite different from human teeth, and are of the continuously erupting type. A recent study reported in the Medical Journal of the United States Armed Forces, [1] which was done on teeth later extracted for orthodontic reasons, showed no difference in degree of damage done to soft tooth tissues, by various means of cutting used. The conclusion was—no irreversible damage by ultrasonic cavity preparation. And this jibes well with the writer's observations—*less* sequelae in several thousand cavity preparations.

Let us come now to the crux of the entire situation, as far as the average, ordinary, "even-as-you-and-I", practitioner is concerned—"How sayeth the patient?".

FIGURE 2 — Enlarged view of end of a cutting tip 3 mm. by 1 mm., showing modified shape for preparing occlusal cavity in upper bicuspid.

More than one of our preceptors has said, "The best friend you have in the world at the moment, is your patient in the chair". The eager, pleased receptivity to ultrasonics by the patients, is a most interesting and heartening phenomenon. Their most common observation is about the "delightful smoothness" (to quote one of them), of this method of toothcutting. Many call it "the magic drill". Its speed in preparing developmental pits and grooves does seem magical. The relaxed attitude of the patient is another worthwhile benefit to be derived. The lack of noise, and the complete absence of vibration, must also be considered useful attributes. And the nervous, anxious patient, seeing that the tip is flat at the end, has no blades, and does not rotate or seem to move at all when in action, is once again relieved and relaxed.

As noted earlier in this article, pain is not a supremely important consideration here, in view of the several methods available to control it. Nevertheless it is necessary to report that by using hand instruments to remove soft material, and ultrasonic tips to cut the shape desired in the hard tooth structure, pain has been evident in considerably less than 20% of the operations carried out in eighteen months. In the writer's practice, ultrasonics is used in almost 100% of cavity preparations for fillings, crowns and bridge abutments, and an anaesthetic was necessary but three times in that period of time. Most of those who did feel any pain reported that it seems to be of different nature, not associated with heavy vibration, and much more easily tolerated. The ultrasonic tooth-cutting method is surely well worth serious consideration by the profession, and additional checking on our own evaluation of it. We believe it offers a great step forward in improving both our standard of work in the mouth, and our relations with the public—our patients.

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CANADIAN SOCIETY OF ORAL SURGEONS

Fourth Annual Meeting **Sunday, June 23rd, 1957**

WINNIPEG, MANITOBA

Clinical Sessions — Morning and Afternoon

Business Meeting — During Luncheon

Guest Speaker — DR. DON BELLINGER, Saginaw, Michigan

Topics: (1) Disturbances of the Temporo-Mandibular Joint.
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Winnipeg 1, Manitoba

The Use of the Bite Plate as a Pre-restorative Measure

STANLEY D. TYLMAN, A.B., D.D.S., M.S.*

There are many abnormal conditions which require a complete oral rehabilitation service. Not only must the damage to the individual teeth be repaired but also the malrelationships which exist between the teeth of one arch and those of the other. The relationship of one arch to the other if not normal may manifest itself through many symptoms. This is particularly true of the so-called "close-bite" cases.

Much harm has been done at times from the promiscuous and ill advised application of the so-called "bite-opening" technics.

When malocclusions and a mandibular malrelationship are accompanied by certain subjective symptoms, it is advisable to make a thorough examination to determine their causes. One of the most frequent complaints is a tenderness or pain upon the slightest palpation in the temporo-mandibular joint area. Patients also complain of a "crackling" noise in the joint when the mouth is opened; frequently they complain of dizziness and an impaired hearing. Others suffer from localized headaches and mandibular subluxation, occasionally a burning sensation is experienced along the sides of the tongue. An examination of the tongue usually fails to disclose any pathologic manifestations. Those patients suffering from trauma of the periodontal tissues generally experience some cuspal interference during function. When these patients swallow, the functional, vertical height of their face is reduced to such a degree that the facial expression is entirely changed.

When occlusal interference is encountered during the closure of the mandible a sagittal displacement of the mandible usually occurs. When such displacement is present the patient should be asked to open and close slowly several times; the points of interference can then be noted and the direction and degree of displaced movement determined.

Many of the symptoms previously mentioned are associated with excessive attrition of the natural teeth; this results in an excessive free-way space and a reduced functional, vertical dimension. Where no cusp interference exists the teeth are usually worn down evenly and the bone and periodontal tissues are normal. Such conditions lend themselves well to a complete oral rehabilitation program.

Finally, there are those patients suffering from malocclusion due to lost, impaired, or malposed teeth. Here it is necessary to determine which teeth can be retained and restored to normal function and which ones are to be removed. This decision is made after the study casts have been mounted on an articulator and a diagnosis made together with a preliminary plan of treatment and its prognosis.

Many factors are involved in the concept of a normal, occlusal relationship. The concept involves more than the teeth alone, it also involves the jaws and all muscle relationships.

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Some misconception has crept into the dental literature in connection with the so-called "bite-opening" procedures. This is largely due to the erroneous assumption that the normal height of the face depends upon the presence of teeth, and that the loss or attrition of the teeth creates a decreased vertical dimension of the face. The fact is overlooked that there is a functional vertical relationship as well as a rest vertical relationship. The occlusal vertical relationship is unstable and varies according to the changing oral conditions. Therefore, it is not a true vertical dimension of the face. The vertical relationship at rest, is the true vertical dimension of the face for orientation purposes because when the mandible is at rest it is suspended in a muscularly balanced position; this position and relation are stable and characteristic for that individual from birth to death.

Because the rest position is relatively constant at all ages throughout life it is the logical position of the mandible from which to analyze any subsequent malrelationships of the jaws or malocclusion of the teeth. Two factors enter into an analysis of an existing malrelation, namely, (1) the path that the mandible travels from a position of rest to functional occlusion, and secondly, the size of the free-way space; this indicates the amount of closure which exists.

Niswonger many years ago defined the rest position as "That position of the mandible in which it is involuntarily suspended by the reciprocal coordination of the muscles of mastication and the depressor muscles, with the upper and lower teeth separated, or as the neutral position of the mandible."

The space between the functional and the rest positions of the mandible is the so-called free-way space which normally averages 3 mm. at the central incisors. It is important in extensive oral reconstruction that a suitable free-way space be maintained. It was found clinically, that if the occlusal height of the teeth was increased in artificial complete dentures beyond the rest position, the alveolar bone or ridges absorbed; and if done to natural teeth, the teeth either were depressed in their arches or the resultant trauma produced a loosening and a loss of the natural teeth.

Before proceeding with a discussion of the bite plane, it might well be to review some of the factors related to the movements and relationships of the mandible to the cranium. As is well known, the mandible is connected to the cranium by two joints. The movement in both may be rotary simultaneously, as in a simple hinge closure; or, both condyles with the meniscus interposed, may simultaneously slide along the slope of the inferior-posterior border of the articular eminence.

In the rotational type of movement there is practically no spacial displacement of the condyles. In the sliding movement there is a translatory vertical displacement of the condyles in the articular fossae. There is still another translatory movement which takes place when the mandible shifts laterally during function; this is known as the Bennett movement. While the three movements have been mentioned separately, they usually take place concurrently—although the hinge type may more nearly be performed as an individual movement. With a recognition of these different movements, together with an understanding of the anatomy and physiology of the related tissues and their functions, the next procedure entails the recording of these movements on the patient and transferring them to an instrument capable of accepting these registrations so that the same movements of the mandible are reproduced on the instrument as they occur in the patient.

The simplest movement of the mandible is the hinge movement. It is accompanied by the simple rotation of each condyle on the lower surface of its meniscus. Because the meniscus may move along the incline of the articular eminence the rotation of the condyle may take place at any point on this incline, designated as the "Condyle Path".

The first step therefore, is to determine

the hinge movement of the condyle. Later the path which the condyle and meniscus travel along the posterior-inferior border of the articular eminence is recorded. Actually, the temporomandibular joint consists of not one but two joints; one rotating, the other sliding. The two movements may occur separately but usually take place simultaneously.

The determination of the hinge axis begins with the rest position of the mandible. The mandible cannot be held wide open, in occlusion, or in the lateral or protrusive positions, in a static condition for any length of time without the musculature becoming fatigued; the mandible habitually returns to a comfortable resting position which is determined by a neuro-muscular mechanism which restores the muscles to their physiologic, tonic length. In this state of muscle equilibrium the mandible can be held a long time without fatigue. In this position of rest, there normally exists from two to four millimeters of inter-occlusal space between the anterior maxillary and mandibular teeth.

The patient is instructed to practice for a few minutes the relaxed closing and opening of the jaw. This is accompanied by a pure hinge movement on centres of rotation in each condyle. To try and locate these centres by placing fingers on the side of the face near the tragus is largely guess work. A more precise method of locating these centres of rotation utilizes a metal clutch, rigidly attached to the mandibular teeth. By means of a stud, the clutch is attached to a hinge bow having an adjustable stylus opposite each condyle. As the mandible is gently opened and closed with a pure hinge motion, each stylus is adjusted vertically and antero-posteriorly until the stylus rotates on a point. This point which establishes the centre of vertical rotation motion of the condyle is then marked permanently on the skin on both sides of the face. A third point, on a plane with the infra-orbital notch, is determined and marked permanently on the right side of the nose. This point with the two others which mark the hinge axes, establish the "Axis-Orbital Plane".

By utilizing this plane of reference, study models as well as working casts may at any time be correctly orientated in the articulator by means of the face bow and the axis-orbital indicator. The relation of the upper model to the axes is the same in the articulator as it is in the patient. All subsequent registrations are made with reference to this established plane; likewise, the validity of all subsequent registrations is determined by the accuracy of this step.

The starting point for such registrations on the patient is the centric relation of the mandible to the cranium in the articular fossae. This relates the mandible to the maxillae in its unstrained, *functionally* retruded position in the articular fossae. This is the most important registration, for all other records are worthless if the centric relation registration is incorrect; all eccentric positions of the mandible are orientated with reference to it.

There is lack of complete agreement on the antero-posterior position of the condyles. A glossary of prosthodontic terms just published defines centric relation as "the most retruded relation of the mandible to the maxillae when the condyles are in the most posterior, unrestrained position in the glenoid fossae from which lateral movement can be made, at any given degree of jaw separation". On the other hand, Sicher just recently states: "The condyle is not located in the deepest part of the fossa and is not in the most retruded position in normal occlusion".

A comparison of laminographs of the condyles under varying conditions shows that (1) there is no change in the position of the condyles from rest position to initial contacting occlusion; (2) increased muscular force raises the mandible and the teeth into complete occlusion and the condyles move very slightly upward and backward pressing the meniscus against the inferior-posterior border of the articular eminence; (3) when a 2 mm. bolus is

interposed between the teeth and full functional muscular force is applied, the condyles advance further upward and posteriorly into the fossae. This is the functionally retruded position which a condyle assumes on the working side. It is braced against the meniscus and the connective tissue pad posteriorly, to sustain the physiologic forces of mastication. One can by exerting additional, abnormal muscular effort retract the mandible still more until pain is felt in the temporomandibular joint. This is the most retruded position possible, but it is not a normal position assumed during the functional movements of the mandible.

A study of the laminograph of the condyle in protrusion of the mandible shows the movement of the condyle downward and forward midway along the condyle path, with no compression of the meniscus. When the mandible is opened wide, the condyle travels to the tip of the articular eminence with apparently the same thickness of the meniscus as in the simple contact occlusion of the teeth.

It is evident that the determination of the correct centric relation of the mandible is subjective on the part of the dentist and depends on the understanding, judgment and skill of the individual dentist. The finest mechanical instruments will not correct false registrations; articulators accept what the dentist imposes on them.

Following the centric relation registration, the right and left lateral, also the protrusive relations of the mandible to the maxillae are taken.

With these four registrations adjusted to the articulator there remains the Bennett movement which indicates the lateral shift of the mandible during function. Not many of the presently used articulators are capable of accepting and reproducing these movements.

There are several methods of recording the maxillo-mandibular relations on the patient. One is by the use of stone cores made against quadrants of the labial and buccal surfaces of the teeth, *with the mandible in rest position.* This may be used on a modified Hanau articulator. The second method is the use of check-bites made of stone to record the several relations, on instruments like the Kinescope and the Gnatholator. On the former type of instrument the exact curved translatory path which the condyle travels in its various eccentric movements is not reproduced; only a chord from the start- and terminal points of the curved path is obtained. The third method is the one employing the Gnathograph and similar instruments which graphically record the various positions and exact paths travelled by the condyles. The graphs permit the adjustment of the instrument to the same relations and jaw movements found in the patient. Whichever method is used an appraisal and analysis of the casts' static and functional relations of the mandible to cranium is possible.

If we conclude that there is an over closure of the vertical dimension with accompanying local dental tissue involvements and temporo-mandibular disturbances, we must decide whether to re-establish the vertical height immediately with restorations or whether a pre-restorative treatment should be used. If the latter, then the bite plate may be utilized.

The use of the bite plate is not new. It has been used in orthodontia and later in periodontia. Its adaptation as an adjunct in the treatment of partially edentulous patients is comparatively recent.

We are aware that when a tooth becomes functionless, due to the loss of its occluding opposing tooth, that it egresses from its former plane of occlusion. This change does not take place by the tooth erupting out of its socket as it does when it is worn down by normal attrition. This movement, up or down, depending on whether it is a lower or upper tooth, is accompanied by the movement of the entire paradontium; the gingivae, the periodontal membrane, and the lamina dura; also a change takes place in the supporting bone trabeculae. This mass movement continues until the tooth meets an opposing stop, usually an opposing tilted or rotated tooth. If no opposition is encounter-

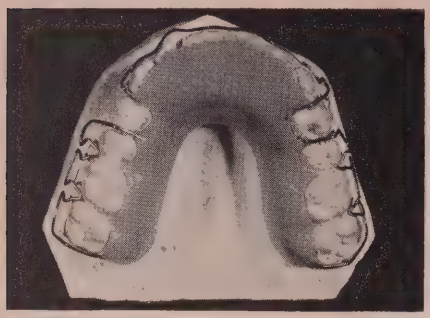

FIGURE 1

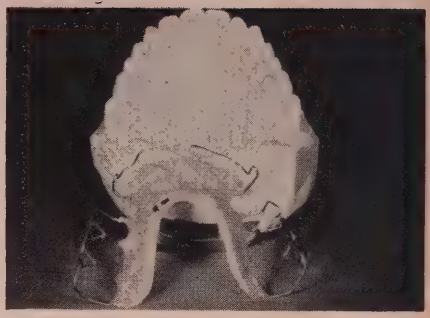

FIGURE 2

ed the tooth may egress to the extent that it touches the mucosa of the opposing edentulous ridge.

Recognizing this unique biologic phenomenon of nature in moving functionless teeth, the bite plate is utilized to assist biologically in the establishment of the desired vertical height.

On the other hand, we must keep in mind that taking teeth out of function *permanently*, would not only cause them to egress, but harmful changes would take place in their supporting and contiguous tissues; the width of the periodontal membrane would decrease, the supporting alveolar bone would gradually be diminished in form and size causing an increase in the size of the marrow spaces. This, of course, is not desirable, consequently it is recommended that although the patient wears the appliance continuously day and night, he removes it at meal time, three times daily, after which it is replaced.

The stimulation which the teeth receive during these three functioning periods prevents any deleterious tissue changes in the paradontium, even though the entire mass is moving occlusally.

Later, when final rehabilitation is accomplished, a new bite plate is made for the patient which is worn only at night. The length of time it is worn varies with different individuals. The bite plate is a relatively simple appliance, made of acrylic resin and may be made with or without retentive clasps. Figs. 1 and 2. It is horseshoe shaped, leaving most of the palate area uncovered. Usually an anterior wire is placed, extending from cuspid to cuspid to secure the stability of the anterior teeth. Fig. 3. If clasps are used, they are the arrow type and are placed in the bicuspid and molar interdental, buccal embrasures, near the cervical region. Figs. 4, 5. This type of retainer does not restrain the occlusal movement of the bicuspids and molars.

On the anterior palatal surfaces of the bite plate a flat bite wall is made extending from cuspid to cuspid. Fig. 1. This

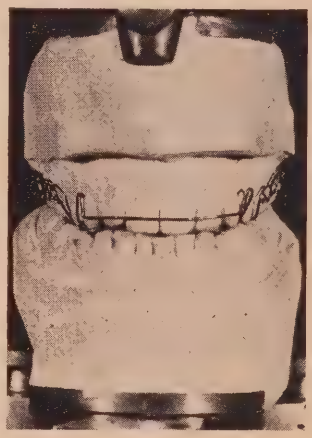

FIGURE 3

FIGURE 4

FIGURE 5

flat plane meets the incisal edges of the lower six anterior teeth at an exact angle of 90° so that only a vertical force is exerted on them. It is usually necessary to level their incisal edges so that uniform contact is made against the bite wall. There should be no depressions in the flat plane to prevent the free movement of the mandible into its true centric relation. The height of the bite plate should allow the patient 1½ to 2 mm. of freeway space.

Because of the smooth, flat incisal

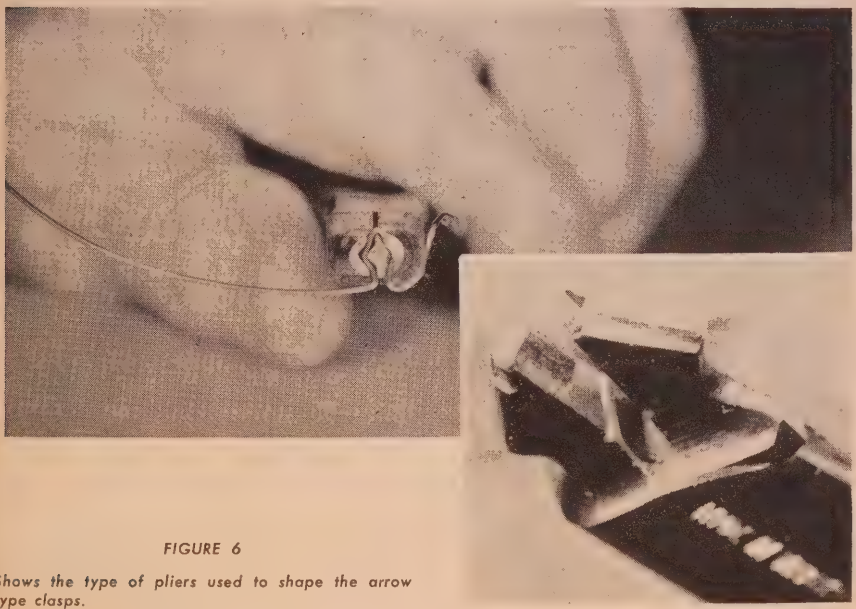

FIGURE 6

Shows the type of pliers used to shape the arrow type clasps.

plane and a sufficient freeway space, the patient [1] will be able to attain physiologic rest position, [2] the condyles will be relieved of any strain and consequently the correct neuro-muscular pattern will gradually condition the patient into a correct centric relationship. This is a great help later in taking the various jaw registrations for mounting the casts.

The patient wears the bite plane from three to six months; sometimes longer if orthodontic treatment is also included. Since an interocclusal space is created between the opposing bicuspids and molars, by the anterior bite wall of the appliance the posterior teeth will gradually egress until they contact each other. The question as to how much should the teeth be allowed to egress is important. This is done by checking the position of the lower incisal edges in a position of rest and the cuspids in lateral occlusion. This may be done in the mouth or on the casts mounted on the articulator in their correct axes-orbital relationship.

When normal masticatory movements can be made without premature injurious contact of the anterior teeth, the proper posterior opening has been attained and the reconstruction may be initiated.

HIGHLIGHTS OF THE

BRITISH COLUMBIA DENTAL ASSOCIATION CONVENTION

Empress Hotel, Victoria, B.C. — May 16, 17 and 18, 1957

Wednesday Evening — Registration, Press Dinner, Fraternal Reunions.

Thursday — **Opening Ceremonies. Speaker:** Hon. Wesley Black, Provincial Secretary of the Province of British Columbia.
Lectures during the day.
Evening: Banquet and Floor Show. Speaker: The Honourable the Canadian Ambassador to Japan.

Friday — **Lectures** during the day, followed by the annual meetings of the College of Dental Surgeons and the Dentists' Legal Protective Association.
Evening: President's Reception and Cocktail Party followed by Supper Dance.

Saturday — **Table Clinics.**
Luncheon and Annual Meeting of the B.C. Dental Association.
Golf.
Commercial Exhibits.
Evening: Empress Hotel Supper Dance.

* * *

FEATURED ESSAYISTS

1. **Dr. Sol Silverman, Jr.,** Assistant Professor of Dental Medicine, University of California, and Dental Consultant, University of California Medical School, who will speak on: "The Practical Approach to Pain — Treatment and Mistreatment" and "Pharmacology in Dental Practice Today".
2. **Capt. Theodore A. Lesney,** (D.C.) U.S.N. Chief of Dental Service, U.S. Naval Hospital, San Diego; Diplomate of the American Board of Oral Surgery, who will speak on: "Medications and Surgical Technique of Interest to the General Practitioner".

* * *

The ladies will have a full program, including a sherry party, luncheon, tea, sightseeing tour, and also convention banquet, cocktail parties and dances.

* * *

Address inquiries to Dr. Ross Upton, Executive Secretary, 217 Medical Dental Bldg., Vancouver, B.C.

ABSTRACTS

The Responsibilities of the Medical Profession in the Use of X-Rays and Other Ionizing Radiation

Statement by the United Nations Scientific Committee on the Effects of Atomic Radiation

The United Nations General Assembly, being aware of the problems in public health that are created by the development of atomic energy, established a Scientific Committee on the Effects of Atomic Radiation. This Committee has considered that one of its most urgent tasks was to collect as much information as possible on the amount of radiation to which man is exposed today, and on the effects of this radiation. Since it has become evident that radiation due to diagnostic radiology and to radio-therapy constitutes a substantial proportion of the total radiation received by the human race, the Committee considers it desirable to draw attention to information that has been obtained on this subject.

Modern medicine has contributed to the control of many diseases and has substantially prolonged the span of human life. These results have depended in part on the use of radiation in the detection, diagnosis and treatment of disease. There are, however, few examples of scientific progress that are not attended by some disadvantages, however slight. It is desirable therefore, to review objectively the possible present or future consequences of increased irradiation of populations which result from these medical applications of radiation.

It is now accepted that the irradiation of human beings, and particularly of their germinal tissues, has certain undesirable effects. While many of the somatic effects of radiation may be reversible, germinal irradiation normally has an irreversible and therefore cumulative effect. Any irradiation of the germinal tissues, however slight, thus involves genetic damage which may be small but is nevertheless real. For somatic effects there may however, be thresholds for any irreversible effects, although if so these thresholds may well be low.

The information so far available indicates that the human race is subjected to natural radiation,[1] as well as to artificial radiation due to its medical appli-

1 The radiation due to natural sources has been estimated to cause between 70 and 170 millirem of irradiation to the gonads per annum in most parts of certain countries in which it has been studied, although higher values are found locally in some areas. See the reports "The hazards to man of nuclear and allied radiations" published by the United Kingdom Medical Research Council in June 1956, in which also the millirem is defined; and from information submitted to the Committee.

cations, to atomic industry and its effluents and to the radioactive fall-out from nuclear explosions. The Committee is aware of the potential hazards that such radiation involves, and it is collecting and examining information on these subjects.

The amount of radiation received by the population for medical purposes is now, in certain countries, the main source of artificial radiation and is probably about equal to that from all natural sources. Moreover, since it is given on medical advice, the medical profession exercises responsibility in its use.

The Committee appreciates fully the importance and value of the correct medical use of radiation, both in the diagnosis of a large number of conditions, in the treatment of many such diseases as cancer, in the early mass detection of conditions such as pulmonary tuberculosis, and in the extension of medical knowledge.

Moreover, it appreciates fully the contribution of the radiological profession, through the International Commission on Radiological Protection[2] in recommending maximum permissible levels of irradiation. As regards those whose occupation exposes them to radiation, the establishment of these levels depends on the view that there are doses which, according to present knowledge, do not cause any appreciable body injury in the irradiated individual; and also on the consideration that the number of people concerned is sufficiently small for the genetic repercussions upon the population as a whole to be slight. Whenever exposure of the whole population is involved, however, it is considered prudent to limit the dose of radiation received by germinal tissue from all artificial sources to an amount of the order of that received from the natural background radiation.

It appears most important therefore, that medical irradiations of any form should be restricted to those which are of value and importance, either in investigation or in treatment, so that the irradiation of the population may be minimized without any impairment of the efficient medical use of radiation.

The Committee is consequently anxious to receive information through appropriate governmental channels as to the methods and the extent by which such economy in the medical use of radiation can be achieved, both by avoiding examinations which are not clearly indicated and by decreasing the exposure to radiation during examinations, particularly if the gonads, or the foetus during pregnancy lie in the direct beam of radiation. It seeks, in particular, to obtain information as to the reduction in radiation of the population which might be achieved by improvements in instrument design by fuller training of personnel, by local shielding of the gonads, by choosing appropriately between radiography and fluoroscopy, and by better administrative arrangements to avoid any necessary repetition of identical examinations.

The Committee also seeks the co-operation of the medical profession to make possible an estimate of the total radiation received by the germinal tissue of the population before and during the child-bearing age. It considers it to be essential that standardized methods of measurement, of types at present available, should be widely used to obtain this information and it emphasizes the value of adequate records, maintained by those using radiation medically, by the dental profession, and by the responsible organizations in allowing such radiation exposure to be evaluated. The Committee is convinced that information of this type will make it possible to decrease the total medical irradiation of the population while preserving and increasing the true value of the medical uses of radiation.

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2 See the report of the International Commission on Radiological Protection (published in the British Journal of Radiology — Supp. 6, of December 1954 — in the **Journal français d'electro-radiologie** — No. 10, of October 1955 — etc. and revised in 1956).

Air Abrasive

WARREN WILLMAN, D.D.S., M.S.

Air abrasive is a non-mechanical means of cutting dental hard tissues and several dental materials through the use of a finely focused stream of abrasive particles propelled by a dry gas, normally carbon dioxide. The pressure at the nozzle tip is usually about eighty pounds to the square inch; the abrasive used is aluminium oxide, carefully graded to a particle size averaging twenty-eight microns.

The abrasive particles leave the nozzle at a velocity of 1200 to 1900 feet per second. It is a well known characteristic of flying abrasive particles that different substances are cut at varying speeds, the harder being cut the more rapidly. Thus air abrasive cuts enamel slightly faster than dentine while soft tissue is almost unaffected.

The crux of the method lies in the fact that the shape of the cut made by the abrasive stream varies as the distance between nozzle and tooth is varied. If the nozzle is moved in a straight line close to the tooth surface, a thin cut is produced like that of an ultra-thin carborundum disc; if the nozzle is held a little farther from the surface, the walls of the slit average slightly, as though a pointed tapering fissure bur or stone had been used; if the nozzle is held some distance from the surface, a wide V-shaped trench will be cut without sharp angles at the bottom or at the surface.

By combining these various cuts it is possible to approximate closely any type of dental preparation. In many instances a moderate amount of hand instrumentation or a small amount of rotary cutting may be needed to make them indistinguishable from preparations made by the conventional methods.

Speed of cutting is controlled by varying the amount of abrasive fed into the gas stream. Cutting is started or stopped by a single foot switch. Air abrasive is, in fact, a kind of three dimensional airbrush; one almost literally paints the cavity into the tooth. The initial learning period, devoting some hours to practice on extracted teeth, is necessary in order to develop skill and ease in utilizing the various cuts to produce the desired cavity forms.

A softer abrasive (dolomite) is provided in the apparatus which, used at reduced pressure, does not cut tooth structure appreciably but which rapidly removes supragingival calculus, tars, stains, and pelicles from tooth surfaces—including tightly overlapped areas, fissures and chipped spots which cannot be readily cleaned by any other method.

In fairly clean mouths this use of air abrasive is of no particular advantage to the patient or the dentist, but in mouths with medium to heavy visible deposits, it is a boon to both, sometimes verging on the spectacular.

The use of a thin disc of water-clear synthetic sapphire, cemented on a front surface rhodium mirror, has brought to a swift end the problem of fogging or etching which made conventional mouth mirrors impractical.

Air abrasive is entirely practical if the dentist really wants to make it so. This is much like saying that golf or photography is practical as a hobby. Both require expensive equipment and long, arduous practice before satisfying skill is attained, but both are obviously practical if the hobbyist has a genuine desire to exploit them. Then, like air abrasive, they are fun from the first fumbling start all the way up to expert performance. If a dentist wants to treat his patients with-

out encountering the resistance associated with the handpiece, if he wants to avoid the physical tension this generates in him as well as the patient, if he wants to work rapidly and see cavities appear in teeth when he merely points at them, then air abrasive will be practical.

If, when we speak of doing good work in dental preparations, we identify goodness with exact geometricity, obviously air abrasive will fall short of what can be done with rotary instruments. One cannot expect to draw a circle free-handed as precisely as it can be scribed with a compass. But preparations made with air abrasive can approach quite closely those made with rotary instruments, and a small amount of additional instrumentation can bring them quickly to any degree of textbook perfection that may be desired.

Illinois Dental Journal
Volume 25, No. 12, December 1956

The Relation of Periodontal Diseases to Public Health

CLIFTON O. DUMMETT, D.D.S., M.S.D., M.P.H.

Public health is defined as the science and art of preventing disease, prolonging life and promoting physical and mental efficiency through organized community effort. Knutson observes that this definition, despite its comprehensiveness, is not sufficiently practical. The specific objectives of public health as they affect dentistry encompass the prevention, early diagnosis and treatment of dental caries, malocclusion, oral clefts and other anomalies, cancer and traumatic injuries of the teeth and maxilla. In addition there are instructions in acceptable oral hygiene, the prevention and treatment of gingival and periodontal diseases, the production of scientifically accurate information, the motivation of proper oral health habits and attitudes on the part of the public, and the development of lectures for dental public health programs.

Periodontics is that specialty of dental science which is concerned with the study, prevention and treatment of diseases of the supporting tissues of the teeth. In origin or in effect, periodontal diseases may include those local or systemic disturbances of the supporting tissues which may be morphologic, infectious, traumatic or degenerative.

After 35 years of age patients lose more teeth as a result of periodontal diseases than from any other single dental disease. Affections of the periodontium must therefore be reckoned with, both as a major concern in present-day dentistry, and as one of the health problems in need of support by the public health profession.

Existing epidemiologic information shows that periodontal disease is widely prevalent, is probably influenced by systemic disease, is likely to occur increasingly with advancing age in both sexes and affects men earlier in life than women.

The Journal of the American Dental Association
Vol. 54, No. 1, Jan. 1957

EDITORIAL

What about dental X-Rays?

For some time many popular magazines have given over much space to the discussion of radiation both from atomic sources and X-rays. These articles, although often pseudo-scientific in nature, have quite understandably caused consternation in the minds of dentists, physicians and laity alike. The difficulties are compounded even further when it must be admitted that no one knows the effects of ionizing radiations upon human cells. While a great deal is known, there is much still to be learned.

A dilemma is thereby created. Radiographs have become an essential part of the armamentarium of diagnosis. It is almost inconceivable that one would approach periodontal, surgical, and orthodontic treatment without the benefit of radiographs. Sound operative and prosthetic services are often dependent upon information gleaned from them. The indisputable value of bite-wing radiographs in the discovery of incipient caries has made these films virtually mandatory for any adequate clinical examination. Yet, because of the grave doubts created by the aforementioned articles, some patients, both for themselves and their children, are willing to forego the obvious value of the judicious use of X-rays in favour of some improbable conjecture.

This places the practising dentist in a somewhat untenable position. On the one hand he recognizes the essentiality of radiographic service to the practice of dentistry while on the other, because no categorical answers are possible, he is unable to state unequivocally to the patient that no harm from the dental X-rays will accrue.

The editor of the Journal of the Southern California State Dental Association recently made a cursory survey of the practices of paedodontists and concluded that it was routine among most of them to employ a semi-annual survey of two posterior bite-wing films, one on each side, and one maxillary central film, and one mandibular central film. The time exposure in milliamperage used in conjunction with target distance indicated that each semi-annual exposure subjects the child to one roentgen. The safety dose is considered currently as one hundred roentgens, or one-fourth of the erythema dose. In other words, each semi-annual examination subjects the patient to one per cent of the safety dose, or one per cent of one fourth of the erythema dose. This would appear to be an ample margin of safety.

Elsewhere in this issue appears a brief statement prepared by the Scientific Committee on the Effects of Atomic Radiation, established by the General Assembly of the United Nations. It is accepted that irradiation of the germinal tissues of human beings has certain undesirable effects, because while many of the somatic effects of radiation may be reversible, germinal irradiation normally has an irreversible and therefore a cumu-

lative effect with the real possibility of genetic damage.

There is no evidence that in the amount of radiation necessary for making radiographs there is any deleterious effect upon cells other than reproductive ones and it is difficult to see any reason for changing our outlook in respect of the normal practices of radiographing teeth. While it must be stipulated that all necessary care should be taken, dentists should be able to reassure their patients that a properly collimated and filtered beam used at an anode skin distance of 12-20 inches, with fast emulsion films should occasion no need for concern.

There is one area however, in which there is great need for remedial action. Safety precautions, generally speaking, are woefully inadequate. There appears little doubt that governmental regulations respecting radiation will be forthcoming in the foreseeable future. It would be to the dental profession's credit to anticipate such directives.

Of course, it must be assumed that no dentist in this enlightened age would even remotely consider holding a film in situ while a radiograph is being made. But are adequate lead lined screens available to protect the operator and a sufficiently lengthy cable attached to the timing device, to enable the dentist to remove himself completely from the area of direct application? What about secondary effects especially in large medical-dental buildings, where many X-ray units are employed?

Although some financial outlay would be required, it would appear to be desirable that a reasonably small area, enclosed by lead-lined partitions which enable the operator to stand outside, would be desirable. Such an arrangement would permit the employment of X-radiation in the safest possible manner.

The Research Committee of the Canadian Dental Association is presently engaged in gathering factual information for study and ultimate report. In the meantime it is our opinion that the dentist can serve his patient best by a strict observance of all safety factors and by making only those radiographs which are essential to the provision of the highest standards of dental health care.

THE LIBRARY

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

A.D.A. COUNCIL ON DENTAL THERAPEUTICS: Accepted dental remedies. 22nd ed. 1957. 212p.

ALBANESE, Dr. P.: Le Parodontopathie. (Italian text) 2nd ed. 1956. 112p. illus.

DARCISSAC, E. P.: Paradontites pyorrheiques gingivites superficielles et profondes. 1956. 78p. illus.

DOBBS, E. C.: Pharmacology and oral therapeutics. 11th ed. 1956. 579p.

FRY, W. K., & WARD, T.: The dental treatment of maxillo-facial injuries. 2nd ed. 1956. 372p. illus.

GRANT, J. C. B.: An atlas of anatomy. 4th ed. 1956. 634 fig.

RUTLEDGE, C. E., & WINSOR, E. G.: The dental business office. 1956. 152p.

SOMMER, R. F., OSTRANDER, F. D., & CROWLEY, M. C.: Clinical endodontics. 1956. 514p. illus.

CONVENTION SUPPLEMENT

★

Joint Meeting

THE CANADIAN DENTAL ASSOCIATION

and

THE WESTERN CANADA DENTAL SOCIETY

JUNE 23 - 26, 1957

Royal Alexandra Hotel, Winnipeg, Manitoba

Manitoba Government Travel & Publicity Bureau

LEGISLATIVE BUILDING WINNIPEG

MANITOBA — *The Gateway to the West.*

It is indeed a privilege to bring my personal greetings along with those of the Board of Governors to this meeting which marks the fifty-fifth anniversary of the Canadian Dental Association.

It is a pleasure to be associated with the Western Canada Dental Society in this convention, and I congratulate the joint committee on the excellence of the programme which they have provided.

Kenneth M. Johnson

President, Canadian Dental Association

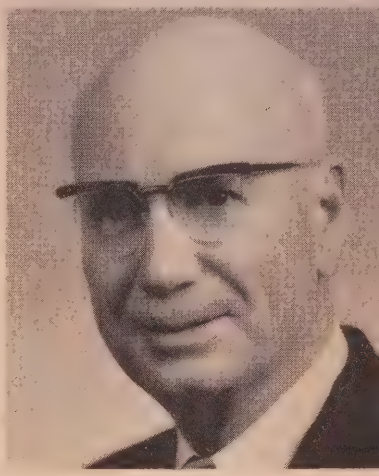
Dr. K. M. Johnson

The occasion of our joint meeting with the Canadian Dental Association in June gives me, along with officers of the Western Canada Dental Society, the happy opportunity of extending to you heartiest salutations.

Welcome to Winnipeg—"The Hosts of Canada", for good fellowship and a well balanced Convention programme.

Warren J. Riley

President, Western Canada Dental Society



Dr. W. J. Riley

On behalf of the Committee I extend a very sincere welcome to our Joint Convention. The programme is a blend of professional and social activities that promises pleasure for all who attend.

Our committee shall continue to work for your pleasure until all the fond farewells are being made.

J. B. Rumberg

Convention Chairman

Dr. Joseph B. Rumberg

PROGRAMM

Subject to Revision

SUNDAY, JUNE 23, 1957

1.00— 5.00 p.m. —Golf Tournament ..... Various Courses

2.00— 5.00 p.m. —Registration ..... Mezzanine

7.00—10.00 p.m. —Reception, Entertainment, Refreshments ..... Tea Lounge

MONDAY, JUNE 24, 1957

8.00— 9.00 a.m. —Registration

9.00 a.m.—5.00 p.m. Commercial Exhibits Open ..... Banquet Hall

9.00—11.45 a.m. —Essay ..... Crystal Ballroom

Dr. Vincent Trapozzano—"*Full denture prosthesis*"

12.15— 2.30 p.m. —Luncheon ..... Main Dining Room

Canadian Dental Association

Speaker: Dr. K. M. Johnson—The President's Report.

2.45— 3.45 p.m. —Lecture ..... Crystal Ballroom

Dr. Holly Halderson—The Grieve Memorial Lecture

"*Minute Forces in Tooth Movement*".

4.00— 5.00 p.m. —Essay ..... Crystal Ballroom

Dr. Don Bellinger—"*Benign Tumours of the Oral and Facial Region*". Presented by Canadian Society of Oral Surgeons.

4.00— 6.00 p.m. —House of Delegates Meeting

The Western Canada Dental Society.

7.00 p.m. —Social Evening—(See page 154)

IN BRIEF

TUESDAY, JUNE 25, 1957

9.00 a.m.—5.00 p.m. Commercial Exhibits Open ..... Banquet Hall

9.00—11.45 a.m. —Essay ..... Crystal Ballroom
Dr. Ralph W. Phillips — "*Common Causes of Failure in Restorative Dentistry*"

12.15— 2.00 p.m. —Luncheon ..... Main Dining Room
The Western Canada Dental Society
Speaker: Dr. Warren J. Riley

2.15— 5.00 p.m. —Limited attendance clinics ..... Private Dining Room
Dr. Vincent Trapozzano
Table Clinics ..... Crystal Ballroom
Scientific Motion Pictures ..... Private Dining Room

6.00— 7.00 p.m. —R.C.D.C. Cocktail Party ..... Private Dining Room

6.00— 8.00 p.m. —Reunion Dinners ..... Private Dining Rooms

8.00 p.m. —Special Convocation of the University of Manitoba .. Ballroom

WEDNESDAY, JUNE 26, 1957

9.00 a.m.—12 Noon Commercial Exhibits Open ..... Banquet Hall

9.00—11.45 a.m. —Essay ..... Crystal Ballroom
Dr. Samuel Charles Miller—"*Periodontics and Oral Medicine*".

12.15 p.m. —Luncheon ..... Main Dining Room
The Government of Manitoba
Speaker: Premier Douglas Campbell.

2.00— 5.00 p.m. —Limited attendance clinics ..... Private Dining Room
Drs. Phillips and Miller.

6.15— 7.30 p.m. —Reception and Cocktails

8.00 p.m. —Presidents' Dinner

9.45 p.m. —Grand March.

10.00 p.m. —Presidents' Ball — Dancing and Entertainment.

ESSAYISTS

ORAL SURGERY

DONALD H. BELLINGER, D.D.S., F.A.C.D., F.I.C.D., Diplomate, American Board of Oral Surgery — Saginaw, Michigan.

Dr. Bellinger served a three year residency in Oral Surgery at University Hospital, University of Michigan, followed by two years as Clinical Assistant in the Research Department, Harper Hospital, Detroit. For the next twenty-two years he was Chief of Oral Surgery at the Ford Hospital, Detroit. Since 1952, Dr. Bellinger has been in private practice in Saginaw, Michigan.

Subject: *"Benign Tumours of the Oral and Facial Region."*

ORAL MEDICINE

SAMUEL CHARLES MILLER, D.D.S., F.A.C.D., F.A.D.M., Diplomate, American Board of Oral Medicine — New York City.

Dr. Miller was graduated in 1925 from New York University and since that time has been associated with the Department of Periodontia and Oral Medicine and at present is Professor and Chairman of the Department. He is consultant in Oral Medicine to the Veterans' Administration, U.S. Navy, and various hospitals in New York.

Subject: *"Various aspects of periodontology and oral medicine."*

ORTHODONTICS

HOLLY HALDERSON, D.D.S. — Toronto.

Grieve Memorial Lecturer.

Dr. Halderson was graduated from the University of Toronto in 1930. He is a past-president of the Great Lakes Society of Orthodontists. At present he is the Director of Graduate Clinical Orthodontics in the Faculty of Dentistry, University of Toronto. Of interest, in this present context, is the fact that prior to commencing dental studies, Dr. Halderson was employed as an orthodontic technician by the late Dr. Grieve.

Subject: *"Minute Forces in Tooth Movement."*

OPERATIVE DENTISTRY

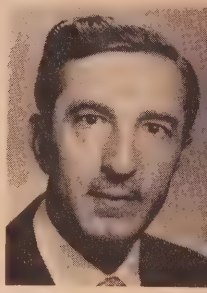
RALPH W. PHILLIPS, D.D.S., M.S.

Dr. Phillips is Associate Professor and Chairman of the Department of Dental Materials at Indiana University. He has twice won the Chicago Dental Society National Award for Research and as well has been awarded the Columbia Alumni Medal for Dental Research. Dr. Phillips' work at Indiana includes both Graduate and Undergaduate training.

Subject: *"Common causes of failures in Restorative Dentistry."*

PROSTHETIC DENTISTRY

VINCENT TRAPOZZANO, D.D.S.



Dr. Trapozzano was graduated from the School of Dentistry of the Medical College of Virginia in 1931. He has served as Professor of Prosthodontics at New York University and at the University of Pennsylvania. At Pennsylvania he also taught in the Graduate School of Medicine and Dentistry. At present Dr. Trapozzano is practising in St. Petersburg, Florida and acts as Consultant in Prosthodontics to the Veterans' Administration and the U.S. Air Force. He is a member of the Academy of Denture Prosthesis and acts on the American Board of Prosthodontics.

Subject: *"Full denture prosthesis."*

Dr. Trapozzano has emphasized that his limited attendance sessions will be directly related to and a continuation of the basic principles he will review in his lecture. It is, therefore, imperative that those members who plan to attend Dr. Trapozzano's limited attendance group, should be present at his opening lecture.

HOSPITALITY NIGHT

— A "first" in Canada —

Featuring true Western Hospitality

You are cordially invited to dinner and an enjoyable evening at the home of a Winnipeg dentist and his wife. This will provide an opportunity for all dentists and their wives to meet others attending the convention.

★

Monday evening commencing at 7.00 p.m.

★

Following registration you will receive an invitation to the home of a Winnipeg dentist and his wife.

PRESIDENTS' BANQUET AND BALL

in the

CRYSTAL BALLROOM ROYAL ALEXANDRA HOTEL

Wednesday, June 26th, 1957

Speaker: **HUGH H. SAUNDERSON, B.A., M.Sc., Ph.D.**
President, University of Manitoba.

Dinner—8.00 p.m. ..... Main Dining Room

Grand March—9.45 p.m. ..... Crystal Ballroom

Dress:—Optional.

Note: The subscription to this event is included in your registration fee.

COMMERCIAL EXHIBIT

A large exhibit containing all the latest in equipment and supplies, has been arranged.

Exhibits open—Monday and Tuesday—9.00 a.m. - 5.00 p.m.
Wednesday—9.00 a.m. - 12.00 noon.

SPECIAL FUNCTIONS

SUNDAY EVENING RECEPTION IN THE TEA LOUNGE

Entertainment — Refreshments

Sunday, June 23, 1957 — 7.00 - 10.00 p.m.

CANADIAN DENTAL ASSOCIATION LUNCHEON

Speaker: DR. KENNETH M. JOHNSON, President, C.D.A.

The President's Report

Main Dining Room **Monday, June 24, 1957 — 12.15 p.m.**

WESTERN CANADA DENTAL SOCIETY LUNCHEON

Speaker: DR. WARREN J. RILEY, President, W.C.D.S.

Main Dining Room **Tuesday, June 25, 1957 — 12.15 p.m.**

UNIVERSITY OF MANITOBA SPECIAL CONVOCATION

Tuesday, June 25, 1957 — 8.00 p.m.

Crystal Ballroom — **Royal Alexandra Hotel**

GOVERNMENT OF THE PROVINCE OF MANITOBA LUNCHEON

Speaker: THE HONOURABLE DOUGLAS CAMPBELL, Premier

Main Dining Room **Wednesday, June 26, 1957 — 12.15 p.m.**

ROYAL CANADIAN DENTAL CORPS ASSOCIATION

An informal cocktail hour will provide the opportunity of a Reunion of all former and present officers of the Corps and dentists who are veterans of other services. This event is becoming an annual social get-together. The ladies are cordially invited.

Royal Alexandra Hotel — **Tuesday, June 25, 5.30-6.30 p.m.**

Tickets may be purchased at the Registration Desk.

GOLF

A special welcome is extended to all golfers attending the Convention. Winnipeg is the most golf-minded city in Canada and intends to maintain that reputation during the visit of the Canadian Dental Association in June. There will be at least a dozen courses available for your relaxation and enjoyment any time you wish to play, so come prepared for plenty of golf.

Plan to arrive in Winnipeg in time to take part in the tournament on Sunday afternoon, June 23rd. Arrangements will be made at the registration desk in the Royal Alexandra Hotel. Further games may be planned at any time during your stay in the city.

SWIMMING

Swimming parties will be arranged for any children attending the convention. Information will be available at the Registration Desk.

LADIES' PROGRAMME

Mrs. Kenneth M. Johnson

Mrs. Warren J. Riley

The Ladies:

This is the year for you to come to Winnipeg!! Our Ladies' Committee for the Convention is busy planning a programme which we know will enable everyone of you to have a wonderful holiday. There will be activities for all and new friends to meet. The Winnipeg Ladies are looking forward to entertaining you.

Let's meet at Winnipeg in June!!

Sincerely,

KATHLEEN RILEY, Chairman of the Ladies' Committee.

Sunday, June 23.

Evening — Registration
Reception and entertainment.

Monday, June 24.

Morning — Registration
Kaffeeklatsch
Evening — Hospitality Night.

Tuesday, June 25.

Morning — Golf
Afternoon — Luncheon — sight seeing
Evening — Convocation

Wednesday, June 26.

Morning — Coffee party
Evening — Presidents' Banquet and Ball.

Canadian Dental Nurses and Assistants Association

Joint Meeting with the

Western Canada Dental Nurses and Assistants Association

June 23rd, 24th, 25th and 26th, 1957

Royal Alexandra Hotel, Winnipeg

Ethel M. Brown,
President, W.C.D.N. & A.A.

Sunday, June 23rd

3.00— 4.30 p.m.	—	W.C.D.N. & A.A. House of Delegates meeting
5.00— 7.00 p.m.	—	C.D.N. & A.A. House of Delegates meeting
7.00— 8.00 p.m.	—	Registration — Library
8.00—10.00 p.m.	—	Reception — Frontenac Room

Monday, June 24th

8.30— 9.30 a.m.	—	Registration — Library
10.00 a.m.	—	Opening Exercises — Frontenac Room
10.45—12.00 noon	—	Table Clinics
12.00— 1.30 p.m.	—	Luncheon — where you please
2.00— 3.00 p.m.	—	W.C.D.N. & A.A. business meeting
3.00— 4.00 p.m.	—	Dr. R. H. Phillips — Frontenac Room Subject: "The Role of the Dental Assistant to the Clinical Success of Dental Restorations."
4.00— 5.00 p.m.	—	C.D.N. & A.A. business meeting
5.00— 6.00 p.m.	—	Exhibits
Evening	—	"After Nine Party"—Tea Lounge

Tuesday, June 25th

9.30—10.30 a.m.	—	Dr. R. R. McIntyre — Frontenac Room Subject:—"The Future"
10.45—11.30 a.m.	—	Mr. G. Tobey — Frontenac Room Subject: "Helpful Hints in Mixing Techniques."
11.30 a.m.—2.00 p.m.		Organized luncheon
2.30— 3.00 p.m.	—	Dr. M. H. Garvin — Frontenac Room
3.00— 3.30 p.m.	—	To be announced
3.30— 4.30 p.m.	—	W.C.D.N. & A.A. election of officers.
6.30 p.m.	—	President's banquet and dance — Tea Lounge

Wednesday, June 26th

9.00—10.00 a.m.	—	C.D.N. & A.A. Annual Meeting
10.15—10.45 a.m.	—	Mr. John Teavendale — Frontenac Room
10.45—11.15 a.m.	—	To be announced
11.15—12.00 noon	—	To be announced
12.00— 2.00 p.m.	—	Luncheon — where you please
2.00— 3.00 p.m.	—	Installation of officers
3.00 p.m.	—	Tea at the Lower Fort

ADVANCED REGISTRATION

Joint Meeting

THE CANADIAN DENTAL ASSOCIATION
WESTERN CANADA DENTAL SOCIETY

Royal Alexandra Hotel, Winnipeg, Manitoba

JUNE 23 - 26, 1957

REGISTRATION FEE $35.00

(Includes all luncheons, two dinners and Presidents' Ball)

Make cheques payable to C.D.A.-W.C.D.S. CONVENTION.

Mail Application form below to:

Dr. W. F. MacKenzie, 700 Boyd Bldg., Winnipeg 1, Manitoba

NAME: Dr. ..... AND WIFE ☐ yes ☐ no

ADDRESS: .....

CITY: ..... Prov. or State .....

ACCOMMODATION DESIRED:

..... DOUBLE OCCUPANCY, Double bed.

..... DOUBLE OCCUPANCY, Twin beds.

DATE OF ARRIVAL .....

ADVANCED REGISTRATION — C.D.N. & A.A.

NAME: .....

ADDRESS: .....

CITY: ..... PROV. .....

ACCOMMODATION: Single .....

Double .....

OTHER OCCUPANT OF ROOM: .....

ADDRESS: .....

TIME OF ARRIVAL .....

THE ASSOCIATION

The following presentation was made to the Minister, at Ottawa on Monday, January 28th, 1957 by the President and Secretary of the Association:

MEMORANDUM TO THE MINISTER OF FINANCE

Deductibility of Pension Payments from Taxable Income

Honourable Sir:

1. Introduction:

We are cognizant of the fact that this matter has been presented for consideration by others on several occasions and we refer you to a memorandum presented by this Association dated 27 October 1955. In our opinion the subject is one of increasing importance not only to professional men but to society as a whole.

2. British Action:

Historically, the principle of the proposal herein proposed is well supported. (See chapter 2—Report of the Committee on the Taxation Treatment of Provisions for Retirement as presented by the Chancellor of the Exchequer to the British Parliament February 1954). It is noted that acting on the recommendations in the report of the Tucker Committee the British parliament adopted legislation at the last session granting the deductibility of pension payments for self-employed individuals from taxable income with certain limitations. Also it is observed that provision is made for older members to deduct larger pension payments to compensate for their age.

3. The Proposal:

We propose that:—

(a) Suitable amendment be made to the Income Tax Act to permit the deduction of payments made for pension purposes, such payments to be within reasonable limits.

(b) Arrangement be made for recognition of age among older members whereby increased payments may be made.

In order to overcome administrative difficulties we suggest that pension plans adopted by representative organizations such as the Canadian Dental Association be recognized for such purpose. Such recognition would obviate the approval of pension plans for individuals. At most, a few plans would require approval. Such plan to be adopted by the association and available only to members of the said association.

4. Privilege not Sought:

This request is not for a special privilege, due to the existing fact that those in other vocations enjoy the same conditions as proposed. Indeed many members of the professions, employed by salary, now are permitted to make deduction for this purpose. To us it appears reasonable that those who are attempting to provide for old age by their own individual exertions should have equal conditions. Exemption from taxation is not proposed but rather a deferment of tax on that portion of current income which is set aside for use in later years.

5. Conditions peculiar to the Dental Profession:

I — Economic Aspects

The Canadian dentist today finds great difficulty in providing an income for his later years. Such amount of income should be related to the standard of living established during more productive years. The accomplishment of this result is not only in the interest of the individual but in the interest of our economy as a whole.

The dentist faces complex economic difficulties in his endeavour to provide income for his later years. These may be summarized as follows:

(a) He starts his professional career relatively late in his youth after spending six to eight years in pre-professional and professional study to qualify for licensure. Thus he is in his latter twenties before entering dental practice and beginning to earn an income. These are expensive years and he is probably in debt.

(b) Before he can begin to practise after graduation he must invest a large sum in order to equip his office. This amount has been computed to be between seven and eight thousand dollars.

(c) By the time he has repaid his investment, he is usually entering his peak periods of earning power. It is also at this time that he has financial responsibilities for a growing family. He must educate his children and undertake many other financial obligations in connection with his home and family.

(d) The peak income earning years of the dentist are comparatively few. The story of the economic life of the Canadian dentist is plainly illustrated in the following statistics for the year 1953, contained in the 1954 Survey of Dental Practice in Canada conducted by the Canadian Dental Association:—

Mean Net Income of Dentists by Age

1953

Age	Mean Net Income
Blank	5,478.00
25-29	6,297.00
30-34	7,901.00
35-39	9,272.00
40-44	8,694.00
45-49	8,431.00
50-54	8,344.00
55-59	7,120.00
60-64	6,286.00
65-69	4,597.00
70-74	3,553.00
75-	3,519.00

(e) A review of this cycle of income, when considered in relationship to the dentist's financial responsibilities, together with the present tax structure leaves little room to embark on a retirement program.

II — Significance in Recruitment to Profession

While the whole effort of the profession is to recruit new members on the basis of service to the public it cannot be ignored that the present taxation structure is a factor in persuading young men into other vocations. Even where the young student is not well-versed or interested in matters related to taxation, those influencing his career (fathers, relatives and older individuals) are conscious of the position of the professional man and persuade the prospective student into vocations where the taxation situation is more favourable.

6. Conclusion:

In our considered opinion this is a serious matter which can affect the future of the profession drastically. A great need exists for the professional man to feel that he is treated fairly in respect to taxation, which is certainly not the case today. We trust that this matter will have your serious consideration.

Corporations Practising Medicine

An interesting judgment on the subject of incorporation of medical practice was handed down by Mr. Justice McLennan (Supreme Court of Ontario) on August 15, 1956. His judgment deals with the question extensively in which the learned judge felt such practice was opposed to the purpose and policy of the Medical Act. The question at issue was whether a covenant in an agreement between parties could be enforced by injunction against the defendant.

The defendant, a surgeon, made an agreement in writing with the plantiff company (Carruthers' Clinic Limited of Sarnia, Ontario) to the effect that the defendant would not carry on practice of his profession within 20 miles of the site of the clinic for two years after the termination of any agreement between the two parties. The defendant practised two years in the clinic after which he left the clinic, but continued to practice within the prescribed area. The Carruthers' Clinic Limited sought to enforce the covenant.

All the income of the plaintiff company was received from the fees earned by the member and non-member doctors and it had no other source of income. These fees were received by the company under the terms of agreements with the doctors, which were identical with the agreement with the defendant.

The judgment examined at considerable length the exact nature of the contract finally stating that the covenant contained in the agreement between the corporation and the practitioner cannot be protected. In disposing of various agreements for the plaintiff certain statements contained are of more than passing interest:

"The evidence already referred to showing what the plaintiff company was actually doing and the statements by the leading spirits in the enterprise, other than their evidence from the witness box, lead inevitably to the conclusion that the statement of its business in the letters patent and the relationship between the plaintiff and the doctors described in the agreements are a mere sham and pretence. The company was the master and the doctors were the servants. While the artificial entity known to the law as a corporation cannot by reason of its nature wield a scalpel or treat a disease any more than it can repair a broken fender or lubricate the engine of a motor vehicle, it can and does act through its servants, agents and officers and through corporate acts such as resolution and by-law. It possesses the general capacity of a natural person. (Bonanza Creek Gold Mining Co., v. The King (1916) 1 A.C. 566.) The doctors were the servants of the plaintiff company; they were practising medicine; they were subject to a rigid and detailed control by the plaintiff company; the board of directors and the executive committee decided what ought to be done with patients in some circumstances; the company had power to regulate the charges to patients and the executive committee gave power to the office staff and to the manager to vary the charges made by the doctors; the company billed the patients; it received all the fees earned by the doctors and that was its only income and its trade commodity was the professional services of its servants the doctors. I have therefore come to the conclusion that the plaintiff company was practising medicine.

"If it is unlawful for the plaintiff to practise medicine, then an agreement made to assist in carrying out that purpose is unlawful and void. To determine this question it is necessary to refer to the provisions of the Medical Act."

The learned judge reviewed the provisions of the Medical Act and then said in part:—

"I cannot agree, therefore, with counsel for the plaintiff that the cases I have just mentioned are authority for the proposition that corporations are beyond the scope of the Medical Act for all purposes. Even excluding from consideration s. 49 of the Act, the purpose or policy of the Act, is clear that only those who are qualified and registered may engage in the practice of medicine because the health and safety of the public requires that the sick and the injured shall be treated only by those who, by reason of education and training and character, know what they are about and who are subject to the discipline and control of the Council, one of whose members is the Minister of Health for the Province. I use the word 'only' because of the words of s. 19 (2).

" 'Those persons only whose names are inscribed in the book or register mentioned in subsection 1 shall be deemed to be qualified and licensed to practise medicine, surgery or midwifery in Ontario, except as hereinafter provided.' Under these circumstances, I think the principles stated in three leading texts are applicable."

After citing these texts, Mr. Justice McLennan continued, from which the following statements are extracted:—

"The mischievous tendency or effect of the impeached agreement or conduct is an element to consider in determining whether the agreement or conduct is contrary to the policy or purpose of a statute. In the cases to which I have referred, the mischievous tendency is either expressly discussed or inherent in the reasons for judgment. I therefore propose to say something about the tendency of the practice of medicine by a corporation.

"The shareholders of the company in the final analysis control it. Although in the first instance the shareholders may all be doctors, in the normal course of events lay persons will become shareholders by transfer or succession, an event which has taken place in this case with the transfer of all the shares of the Carruthers' Foundation. Lay persons are not imbued with the ideals of the medical profession of putting service to the sick

and injured first. They are interested solely in profits and can make their interests felt and effective in the operation of the company and for service will be substituted the methods of the market place. Evidence of this attitude appeared even before the Foundation acquired the shares when the office staff were instructed to revise upward charges set by the doctors which were below the tariff. Much might be said for the law in the United States that the practice of the learned professions by corporations tends to debase the professions. In Re Cooperative Law Co. 198, N.Y. 179 Barton v Cadington County, 140 A.L.R. 550.

"No doubt the reason for the incorporation in this case was not solely to perpetuate the clinic, but to lessen the impact of taxation on the controlling interests in the partnership. The machinery devised to render unto Caesar as little as possible led to the company being used to do things which otherwise the controlling interests would have been responsible for."

"In the practice of medicine the welfare of the patient is at least the dominant consideration. The code of ethics of The Canadian Medical Association puts it in this way:

" 'While the highest service they can give to humanity is the only worth-while aim for those of any profession, it is so in a special sense for physicians, since their services concern immediately and directly the health of the bodies and minds of men.'

"In the nature of things, the relation of doctor and patient involves a measure of control by the doctor over the patient. This position of control is recognized in the law as to the effect of undue influence, as stated by Lord Penzance in Parfitt v. Lawless, (1872) L.R. 2 P. & D. 462, at 468:

" 'In equity, persons standing in certain relations to one another, such as parent and child, man and wife, doctor and patient, attorney and client, confessor and penitent, guardian and ward, are subject to certain presumptions when transactions between them are brought in question; and if a gift or contract made in favour of him who holds the position of influence is impeached by him who is subject to that influence, the courts of equity cast upon the former the burden of proving that the transaction was fairly conducted as if between strangers; that the weaker was not unduly impressed by the natural influence of the stronger, or the inexperienced over-reached by him of more mature intelligence.'

"Where an unqualified person or entity, whose motives are solely that of gain, becomes a party to the relationship between doctor and patient as master of the doctor, and whether openly or by stealth, the welfare of the patient is subject to a competing interest which is not necessarily consistent with it and may be opposed to it.

"For all these reasons, my opinion is that the practice of medicine by the plaintiff company is opposed to the purpose and policy of The Medical Act. The effect on a contract growing out of or connected with an illegal transaction is that the contract is illegal."

This judgment is quoted at some length for the reason that the question of incorporation of practice has been raised frequently during recent years.

City of Winnipeg Fluoridates Water

On December 28th, 1956, the city of Winnipeg began fluoridation of its water supply. Winnipeg is the largest municipality (pop. 409,687) in Canada to fluoridate up to the present time. The number of people in Canada benefitting by fluoridation now is approximately 900,000 or 6% of the total population.

A.P.H.A. Meeting — Fluoridation

At the annual meeting of the American Public Health Association held November 12-16, 1956, at Atlantic City, a session was held on fluoridation. Four scientists reported on studies being conducted at the National Institute of Dental Research (Washington). Their data showed that fluoridated water has a beneficial post-eruptive effect on the reduction of dental caries, that the excretion of fluorides in children is extremely efficient and that there are no indications of harmful effects on periodontal tissues from the ingestion of fluoridated water.

Board of Governors

The Board of Governors' Meeting open to all members of the Association will be held in the Royal Alexandra Hotel, Winnipeg, June 19-21, 1957.

THE DENTAL STUDENTS' REGISTER

1956—1957

TABLE I

Total Enrolment of Undergraduate Students in the Dental Schools of Canada as of January 1st, 1957

University	Freshmen	Sophomores	Juniors	Seniors	Men	Women	Total
Dalhousie University	12	12	12	11	45	2	47
McGill University	34	36	35	32	135	2	137
University of Montreal	52	44	52	36	184	0	184
University of Toronto	78	75	74	78	290	15	305
University of Alberta	30	25	29	28	111	1	112
Totals	206	192	202	185	765	20	785

TABLE II

Maximum Number of Undergraduate Students that will be Accepted in a Class in Canadian Dental Faculties

Dalhousie University	12
McGill University	38
University of Montreal	60
University of Toronto	65
University of Alberta	30
Total	205

TABLE III

Recapitulation of Undergraduate Enrolment in the Dental Schools of Canada 1940-1956 Inclusive

School	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Total
1940-41	31	58	104	210	51	454
1941-42	25	61	118	232	49	485
1942-43	25	67	139	270	53	554
1943-44	22	67	154	255	24	522
1944-45	28	51	162	264	34	539
1945-56	27	73	184	180	54	518
1946-47	38	111	188	340	108	785
1947-48	37	127	208	435	115	922
1948-49	41	146	224	478	123	1012
1949-50	48	147	225	478	136	1034
1950-51	48	145	196	380	114	883
1951-52	49	145	140	300	121	755
1952-53	50	141	111	294	123	719
1953-54	50	142	98	299	118	707
1954-55	48	138	130	313	119	748
1955-56	47	136	161	310	115	769
1956-57	47	137	184	305	112	785

TABLE IV

Total Number of Graduates During the Years 1940-1956 Inclusive

School	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Totals
1940	12	13	23	56	13	117
1941	7	18	14	45	13	97
1942	8	9	31	40	32	120
1943	11	26	18	103	8	166
1944	6	12	37	61	24	140
1945	8	13	30	58	7	116
1946	0	5	41	56	0	102
1947	10	18	36	75	10	149
1948	9	15	38	24	13	99
1949	6	34	45	75	20	180
1950	11	36	42	168	49	306
1951	12	37	69	152	25	295
1952	12	36	55	85	27	215
1953	14	34	20	75	35	178
1954	14	37	20	69	32	172
1955	13	35	19	78	29	174
1956	13	33	20	76	26	168

For the Year 1956	**Male**	**Female**
Dalhousie University	12	1
McGill University	32	1
University of Montreal	20	0
University of Toronto	66	10
University of Alberta	26	0
Totals	156	12

TABLE V

Distribution of Undergraduate Students by Provinces and Foreign Countries in the Dental Schools of Canada as of January 1st, 1957

School	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	United States	British West Indies	Bermuda	Hong Kong	Europe	Australia	Great Britain	Totals
Dalhousie University	9	5	16	10		2				1	2	1					1	47
McGill University	3		1	2	58	16	3	2	1	8	35	4	3	1				137
University of Montreal		2		6	167	4	1	2			2							184
University of Toronto	1	1		1		275	14	9		2						2		305
University of Alberta							8	22	50	26	3				3			112
Totals	13	8	17	19	225	297	26	35	51	37	42	5	3	1	3	2	1	785

TABLE VI

Additional Students

	Dalhousie University	McGill University	University of Montreal	University of Toronto	University of Alberta	Totals
*Graduate during 1956-57	0	0	0	7	0	7
**Post-Graduate during 1956-57	0	0	13	6	5	24
***Occasional during 1956-57	0	0	0	40	0	40
Student Dental Hygienists 1956-57	0	0	0	22	0	22

*The term "graduate" means those dental graduates registered in the Graduate School of a University, proceeding to a degree.

**The term "post-graduate" means those dental graduates registered in a Dental Faculty, proceeding to a degree, diploma or certificate.

***The term "occasional" means those dental graduates registered in a Dental Faculty, for courses of long or short duration, but not proceeding to a degree or diploma.

TABLE VII

Computed Data Respecting Relationship by Percentage and Ratio to Population per Province of Origin of Canadian Students Attending Canadian Dental Schools

Students From	Percentage of Students	*Ratio of Students to Population
Newfoundland	1.66	1/31,929
Prince Edward Island	1.02	1/12,411
Nova Scotia	2.17	1/40,866
New Brunswick	2.41	1/29,190
Quebec	28.66	1/20,571
Ontario	37.83	1/18,198
Manitoba	3.31	1/32,694
Saskatchewan	4.46	1/25,162
Alberta	6.50	1/22,022
British Columbia	4.71	1/37,796
Canada		1/20,485

*Population figures used are as supplied by the Dominion Bureau of Statistics as of June 1st, 1956.

Note: According to information supplied by the American Dental Association there are 39 students from Canada in attendance at dental schools in the United States for the academic year 1956-57. As the province of origin is not designated these cannot be taken into consideration in calculating ratios to population.

Comment on Students' Register 1956-1957

Table I shows a slight increase in the number of students in attendance in Canadian dental schools over the number reported for last year. The increase is sixteen. The total possible is 820 with the available training facilities in Canada. Owing to failures and other reasons, the total possible figure is theoretical. Each school admits a full class for the freshman year but loss of number is bound to occur during the course. The enrolment of students is the highest this year since 1950-51.

The number of graduates during 1956 was the lowest since 1948, 7% of 1956 graduates were female which is the highest percentage for any year of which records exist.

Thirty-nine students from Canada are in attendance at present in the dental schools of United States. There are 42 students in Canadian dental schools from United States.

From the figures presented a slight rise in the number of graduates can be predicted for the immediate future years. However, no appreciable increase can take place until graduates become available from increased teaching facilities for dentistry.

COMMITTEES AND COUNCILS

Housing

"234"

To many of the dentists of Canada, these figures are just a number. That is most unfortunate, but because of time and space it is just possible it will remain so, at least from a visual or personal acquaintance standpoint. How we wish it were otherwise.

However to many of our confreres, 234 St. George Street, Toronto, has been favoured with a visit and personal inspection, and therefore means just that much more to them. They have some appreciation of just what this building means to the Profession of Dentistry.

And then to many others, who are privileged to enter or re-enter the door, which on the north is flanked by a plate bearing in English and French, "The Canadian Dental Association", 234, has become not just a number, not just a Headquarter's building, but rather a symbol of the rise of our Profession to the place it so richly deserves, as a voluntary association dedicated to the health, comfort and happiness of our people.

They also know that the basement, "so called", is not used solely for the furnace, but that all nooks and corners are utilized. Our printing establishment is really something, although there is difficulty in finding space for another bottle of ink.

Also the attic, "so called", is certainly not used for storing obsolete furniture, but utilized to the full for "building superintendent's quarters" and additional storage facilities, for material used for daily administration operations.

We hear the word stabilization so much in these days. For instance the question, "if we could only stabilize our economic structure", stabilize and die. We must go forward, always of course on a sure, safe and sound foundation, but always conscious that the superstructure as is, may not always be the answer to future requirements.

We have built well, but not forever. We are now bulging at the seams. May our vision not be blurred by success in the past, to the point where we are satisfied or shall I say stabilized.

Our Profession will be called upon increasingly, to render more and better service in the future. We must hold our lamps high and keep them supplied with the oil of service which will enable them to show even more light in the future.

R. P. Lowery. Chairman

GENERAL NEWS

A.D.A. Seeks Tax Exemption Legislation

The A.D.A. has launched a campaign seeking approval of legislation introduced in the new Congress to give self-employed persons the same tax rights on pension funds as those accorded to persons employed by others. The bills (H.R. 9 and 10), presented twice previously by Reps. Keogh (D., N.Y.) and Jenkins (R., Ohio), would permit self-employed persons to set up their own retirement funds through a system of partial tax deferment similar to the pension programs of business and industrial firms for their employees. The measure has been approved in principle by the A.D.A. House of Delegates.

Dr. John W. Knutson Elected A.P.H.A. President

Dr. John W. Knutson of Washington, D.C., was installed as president of the American Public Health Association at its 84th annual meeting held November 12-16th at Atlantic City. Dr. Knutson who is assistant surgeon general and chief dental officer of the Public Health Service, is the first dentist to be elevated to the A.P.H.A. presidency.

ECONOMIC SECURITY

This is the first of a series of three articles on Professional Liability of Dentists by Mr. Edson L. Haines, Q.C., a recognized authority in the field of professional liability who, at the invitation of this department of the *Journal* was especially selected by the Law Society of Upper Canada to present this important subject. Our sincere appreciation is extended to Mr. Haines. *Editor*

Professional Liability of Dentists.

EDSON L. HAINES, Q.C., Toronto

PART I.

There is only one way in which a dentist can avoid the possibility of being sued for malpractice. That is, "Don't practice dentistry". Most dentists go through life without being sued for damages by a patient. Perhaps they have displayed on all occasions the required degree of skill, or the damages suffered by the patient were not serious. Or perhaps they have been just plain lucky. The significant thing all professional men must recognize is that in this changing world there is an ever-increasing claims consciousness. People are no longer disposed to suffer a bad result as something inevitable. Where there has been injury, they look for compensation. Their friends are free with what we lawyers call "curbstone" advice. And, what is worse, often a brother dentist to whom the patient has turned for assistance after injury will drop a sympathetic "It's too bad you didn't see me sooner" or "We follow a different procedure nowadays". And an irate patient runs off to see his lawyer.

It is the purpose of this paper to outline briefly the law as it applies to the dentist-patient relationship, comment on some of the more common situations giving rise to malpractice actions, and finally make some suggestions on how to avoid being sued.

THE DENTIST'S STANDARD OF CARE

The essential obligations the law imposes upon the dentist in general practice who takes charge of a case are simply stated. They are:

(1) He must possess and use that reasonable degree of learning and skill ordinarily possessed by dentists in the locality where he practises. The key words in this statement are "reasonable" and "ordinarily". The degree of learning and knowledge is the degree that might reasonably be expected from the average dentist in the district. Few men have rare and extra endowments, but a dentist is not judged by the standards of the paragon. He need only display the skill and learning of the average dentist. Furthermore, a country practitioner, for example, may not have the same opportunities to confer with fellow practitioners as the practitioner in larger centres and one must take into consideration, therefore, the locality where the dentist practises.

(2) The dentist must use his best judgment. Judgment is the faculty of deciding wisely. The law will not be satisfied with anything less than the use of "his best judgment" in exercising his skill and applying his knowledge. He must make the best and wisest decision within his power. It does not, of course, require him to have or use the best judgment some other man might use. It is not the best *possible* judgment, but *his* best judgment he must bring to bear.

(3) He must keep abreast of the times and follow the approved methods in general use. He must know what is going on in dentistry, what new discoveries have been made, what old opinions or conclusions have been discarded. He should take advantage of medical and scientific journals and, if possible, attend

conferences where he may exchange information with other dentists. Doctors are singularly fortunate in the wealth of scientific literature which is available to them, and they fail to take advantage of it at their peril.

The Specialist's Standard of Care

I have already pointed out that the standard of care of the average general practitioner is referable to the locality in which he practises. Conceivably, it might vary in different districts. There is no such local standard for the specialist. He holds himself out as possessing special skills and knowledge, and it is his duty to have and apply the degree of skill possessed by the average specialist in his field. The same degree is expected of him whether he is practising in a large city or a small centre.

The Patient's Duty to His Dentist

The patient's duty may be summed up as the duty to:—

(1) make honest disclosure;
(2) follow orders and directions; and
(3) return for treatment.

Too frequently, we overlook the duties devolving upon the patient. He must make honest and full disclosure, and he withholds information at his peril. He cannot disregard the doctor's orders and directions. If he refuses to submit to a test or an operation, or to follow treatment he considers distasteful, the patient cannot complain when the results are unfortunate. A patient may fail to return for treatment for a multitude of reasons, and a wise doctor will explain to him the necessity of treatment and the consequences of his failure to submit to it. In cases where the patient claims that he did not know he was to come back, I think the onus is on the doctor to satisfy the court that he told the patient what was expected of him. All of us have a tendency to forget our doctors as soon as we think we are well. It is the doctor who knows whether it is important to continue treatment, and my advice to doctors, in cases where the continuation of the treatment is vital to recovery, is to make the fact very plain to the patient and even look him up when he fails to return.

Elements of an Action for Malpractice

In order to succeed in an action for malpractice, the plaintiff must establish, or he fails, that:—

(1) the relationship of dentist and patient existed;
(2) the dentist departed from some duty he owed his patient; and
(3) the departure from duty was the competent producing cause of the injury.

No dentist can be found liable unless he has taken charge of the case. In this connection I should like to comment upon a misunderstanding among many laymen. A doctor is not like an innkeeper or common carrier. He need not accept every case that offers: he is entitled to accept or reject a patient. When he does accept a patient, no particular form of words is necessary; actually, nothing may be said at all. It is sufficient if reasonable men would say that the doctor has taken over the patient's care. No fee is necessary: the obligation of the doctor is exactly the same to a charity patient as it is to one whom he expects to charge a substantial amount.

A doctor does not guarantee a cure or a good result. And a bad result does not in itself establish negligence. He is not liable for a mere error of judgment, provided he does what he thinks is best after careful examination. Where there is a choice of approved methods, one method may be preferable to another. The doctor must decide which he will follow. If he errs in his choice, he is not liable, provided, as I say, he has done what he thinks best after careful examination. But a doctor may not adopt a procedure that has been universally condemned or one that has not yet received the approval of scientific men, and then assert that doing what he did involved a mere "error of judgment".

THE CORPS

THE ROYAL CANADIAN DENTAL CORPS IN EGYPT

This photograph taken on November 30th, 1956 shows Major Paul Sills of Toronto, Ont., and his assistant Sgt. Fediuk of Spalding, Sask., at work in their clinic at Abu Suweir.

It is expected that "The Story of the Royal Canadian Dental Corps" will be ready for distribution soon. Advance orders at $5.00 per copy may be sent to the Director-General Dental Services, Army Headquarters, Ottawa. Please make cheques payable to Brigadier E. M. Wansbrough.

Colonel K. M. Baird of the Directorate recently attended a two-week course in Oral Diagnosis and Oral Pathology at the University of Michigan.

The R.C.A.M.C.—R.C.D.C. Officers' Mess (Militia), Montreal, held its annual ball on February 2nd. Brigadier Wansbrough and Colonel Climo and their ladies attended.

Major R. B. Jackson of the Directorate recently attended a one-week course at the Canadian Civil Defence College, Arnprior, Ont.

Dr. R. H. Headley has been accepted for enrolment in the R.C.D.C. in the rank of Captain. Captain Headley is a native of Sydney, N.S., receiving his B.Sc. degree in 1952 and his D.D.S. in 1956 from McGill University. During the Second World War he served with the Canadian Army in the United Kingdom, Central Mediterranean and Northwest Europe. Captain Headley has been posted for duty in No. 15 Dental Coy., Montreal. He is married and has two children.

Lt. Col. N. L. Simon, C.D., Commanding Officer of No. 56 Unit, R.C.D.C. (M), recently announced the appointment to the Unit of the following officers:

Major D. R. Bannatyne; Major T. B. Lavoie; Capt. D. R. Copeland; Capt. A. F. Harcombe; Lieut. W. L. Curtis; Lieut. P. W. Millard; Lieut. J. Shiffman; 2nd Lieut. P. E. McKenna.

Capt. S. J. Husselbee was promoted to the rank of Major, effective September 1, 1956.

GENERAL NEWS

New Fluoridation Method Announced

Two Public Health Service scientists have developed a new device to reduce the cost of adding fluoride, a tooth decay preventive, to city water supplies, the Public Health Service announced recently.

Present cost of adding fluoride compounds to drinking water averages 10 cents per person per year in most sections of the country. Development of a new dissolver makes it possible to use fluorspar, the least costly form of fluoride, which can reduce the average cost to 3 cents per person per year.

The new device was developed by F. J. Maier, Sanitary Engineer Director, and E. Bellack, both of the Division of Dental Public Health of the Public Health Service. An article describing the results of their research is published in the January issue of the Journal of the American Water Works Association.

Previously it was not practical to use fluorspar in water supplies, despite its lower cost, because it does not dissolve readily. With the new piece of water works equipment, the fluoride in the fluorspar becomes available in the presence of alum, a chemical presently used in many water plants to clarify water. After an alum solution has dissolved the fluorspar, it is fed into the water by a solution feeder, a machine commonly used in water treatment processes.

The new dissolver, which has been field tested for more than six months, is not yet on the market, but its manufacture by private industry is expected to begin in the near future.

Dr. Eber Upton, (rt.) President of the Alberta Dental Association presents a plaque to Dr. E, M. Doyle commemorating fifty years of practice.

THE PROVINCES

Alberta

Faculty Annual Banquet

On February 8th, the graduating class of the Faculty of Dentistry, University of Alberta, held its annual banquet and dance at the Macdonald Hotel. Mr. M. Komlodi of the graduating class was toastmaster.

Dr. J. Zimmerman of Calgary, Alberta representative on the Board of Governors of the Canadian Dental Association was guest speaker. In his usual way, Dr. Zimmerman ably presented to the graduates a message which would inspire them to leadership in dentistry and in citizenship. The attentiveness of his listeners proved his ability as a speaker and a leader in dentistry.

The evening's program concluded with dancing in the ballroom.

R.C.S.

Calgary and District Dental Society

The Calgary & District Dental Society met on December 3rd, 1956, in the Palliser Hotel.

The speaker was Dr. C. Castaldi, Head of the Department of Paedodontics in the Faculty of Dentistry at the University of Alberta. He addressed the meeting at an afternoon and evening session, illustrating his excellent address with slides and showed a motion picture on "Dentistry for the Pre-School child". He spoke on "An Evaluation of Matrix Retainers for Class II Amalgams in Primary Teeth" and "Failure of Amalgams in Primary Teeth".

Dr. James Zimmerman spoke briefly to the meeting, stating that the Calgary Society would benefit greatly from the formation of Study Clubs in Prosthetic Dentistry and Gold Foil Restorations. He indicated his willingness to organize the initiation of study clubs on these phases of dentistry, stating that excellent clinicians would act as instructors if such organizations came into being. The members of the Dental Staff of the Calgary General Hospital are currently conducting a study club in Oral Surgery.

The Calgary & District Dental Society were proud to honor Dr. E. Doyle at this meeting, since 1956 marked his 50th year of practice in Calgary. Dr. Eber Upton, President of the Alberta Dental Association presented Dr. Doyle with a plaque to mark this occasion.

W.A.N.

British Columbia

Vancouver and District Dental Society

One of the most successful meetings was held on January 8 when Dr. E. V. Zegarelli, Associate Professor of Dentistry, Columbia University, spoke on oral diseases.

In the afternoon his subject was "The Nature and Significance of Leukoplakia", and to the large evening concourse he lectured on "Allergic Diseases of the Mouth". It was a change from the mechanical procedures usually covered by clinicians, to have a theoretical subject treated in simple language understood by all. The histamine theory of allergy was outlined, and many of the mouth manifestations were explained.

Dr. Arthur Hayes introduced the speaker, and afterward Dr. Clay Hallman voiced the appreciation of the audience.

Dr. Kyle Berry reported that the emergency dental service instituted by the society was now in operation. Fifty-two dentists in the lower mainland have volunteered their services to take care of patients who are unable to get in touch with their own dentists. Patients who phone the "Emergency Dental Treatment" number are directed by the nurse in charge to volunteer dentists in their own districts.

It was reported by Dr. Don Marshall that fluoridation in Greater Vancouver seems to be assured with the two larger newspapers advocating it editorially.

Pre-School Dentistry

Too many Vancouver children are crippled by dental disease by the time they start school, Dr. D. J. Yeo, Director of the Metropolitan School Dental Services, has warned.

Reporting to the School Board, he said that he wants his staff to see as many pre-school children as possible so dental decay can be checked before it is too late.

The average Grade 1 child requires two hours and seventeen minutes of clinic time, the restoration of 9.5 of the tooth surfaces and 0.5 extractions. The average pre-school child needs less than half that time.

If children could be started at the age of four, the same number of clinics could look after the same number of children through kindergarten, Grades 1, 2 and 3. It is only possible to cope with Grade 1 now, with the tremendous backlog at present.

Victoria and District Dental Society

In January the meeting was held at the Empress Hotel with a goodly attendance of some 43 members and guests.

Dr. Frederick H. Francis of Seattle, who specializes in oral surgery, was the guest speaker, and he gave a talk on bone of the maxilla and mandible. Aided by slides he very ably described its characteristics, response to the presence or absence of stimuli, and its management in surgery with special reference to the later placement of dentures.

The speaker was introduced by Dr. Jameson and thanked for the society by Dr. Louden.

D.H.M.

Manitoba

Dr. J. F. Morrison Retires

A great dental secretary, Dr. J. F. Morrison of Winnipeg, has retired as Secretary, Registrar and Treasurer of the Manitoba Board of Directors of The Manitoba Dental Association, after thirty-six year of service. Dr. Morrison has had a full and varied career covering such fields as school-teaching, military activities, and, above all, denistry. He was graduated from Northwestern University in 1905 and commenced the practice of dentistry in the town of Virden, Manitoba, in 1906 where he remained until the spring of 1915, at which time he left to join the Canadian Army Dental Corps.

Dr. Morrison had been elected to the Manitoba Dental Board in 1912 from which he resigned in 1915 to go overseas in December of that year. After the war was over, he returned to Manitoba and took over command of the C.A.D.C. in Military District No. 10, not being discharged from the Corps until the spring of 1921, thus losing the best

DR. J. FRANK MORRISON

earning years of his life from age 39 to 45.

In 1922, Dr. Morrison went back to private practice in Winnipeg and spent considerable time on cleft palate service. In 1923 he was again elected to the Manitoba Dental Board and made Secretary, which position he maintained until 1946 when the duties of Treasurer-Registrar were added and in which capacity he served faithfully and well until his retirement in December 1956.

Dr. Morrison was elected a Fellow of the International College of Dentists in 1947.

I have been requested to write this short article on behalf of the dental profession of Manitoba in appreciation of the service to dentistry of a great man and a great dentist, and this I gladly do.

Henry Ward Beecher calls all men Priests of God who are working towards the emancipation of their fellows, who are saying to the rocks and to the sky and to the realms of nature, "What secret has God told you?" Tell it to us. Such men are making men free and are emancipating the human mind.

Frank Morrison has made his contribution in his work for the largeness of dentistry and the advancement of a great profession. He has helped to establish a standard by which we are obliged to live. The dentists of Manitoba appreciate his splendid career and would express our gratitude for a magnificent service.

"Dentistry is not a matter of choice, it is not a thing to be waited for, it is a thing to be achieved," and Frank has achieved much as he has left his "footprints on the sands of time."

M. H. Garvin

Manitoba Dental Association

The retirement of Dr. J. F. Morrison as Secretary-Treasurer, Registrar of The Manitoba Dental Association, has brought about several changes within the Association's administrative set-up.

The business office in the Medical Arts Building was reorganized to serve as a central clearing house for all matters pertaining to dentistry within the province. The Winnipeg Dental Society was given space and contributes to the general expense of the office. This is a large step forward, as the two bodies may have mutual problems and can now work closely together to the benefit of both.

Mrs. Miriam MacEwing has been appointed executive secretary to take over much of the onerous paper work. Because of extensive business experience, she was soon able to help reorganize the business office, and, with the advantage of additional equipment, is able to turn out most of the material necessary for the efficient running of the Association and of the Winnipeg Society.

Dr. J. Orr Brown has been appointed Secretary-Treasurer, Registrar. Dr. Brown has served for many years at the executive level in both the Society and the Association. Through this wealth of experience he is exceptionally well qualified to look after the variety of jobs this office now encompasses.

One of the many worthwhile innovations established by the 1956 Association Board was the publication of "The Bulletin". This is a report sent to all Manitoba Dentists at varying intervals containing information about our profession, both at the provincial and federal levels. Suitable binders were also sent out, so that a permanent record of these reports could be kept by every man. The subjects covered so far in "The Bulletin" have been (1) Mediation Committee and Public Relations; (2) The Incorporation of an administrative company by a dentist. In the future many and varied types of information will appear, and this publication should act as a wonderful "go-between" between the Board members and the general body of the Association.

Another outstanding accomplishment within the past year has been the establishment of an effective "Mediation Committee." This was mainly brought about by the desire of the profession to obtain better public relations with the laity. The public will no longer be able to claim that they cannot receive any satisfaction when they feel that they have been unfairly treated by a member of the profession. This committee has been established through a new by-law, and, once the legal requirements are met, the public as a whole—as well as the profession, will be so advised, and this should do much to promote better understanding between the two.

The big event of the 1957 dental calendar will be the Joint Convention of the Canadian Dental Association and the Western Canada Dental Society. The chance to be hosts to our Canadian and American confreres is arousing much enthusiasm in Manitoba. However, along with this enthusiasm there must be—and has been—a great deal of hard work to ensure that the convention will run smoothly. Dr. J. B. Rumberg, the Convention Chairman, has been the guiding hand in instigating this activity and channelling it all together to create a framework for the convention.

Manitoba is indeed fortunate that the Presidents of the two organizations — Dr. K. M. Johnson of the C.D.A. and Dr. W. J. Riley of the W.C.D.S., are both in Winnipeg, and the convention committee has benefitted greatly from their past experience. Their advice and guidance has been much sought after and readily given. These men, along with the numerous committee chairmen, have been hard at work for nearly a year now and the results of all these extra hours should certainly show when the convention dates finally arrive.

Winnipeg and Manitoba dentists would certainly love to be hosts to the biggest and best convention yet, and they extend a sincere invitation to each and every dentist to come to "The Gateway of the West" in June and partake of some of our famous Western Hospitality.

Winnipeg Dental Society

A business and clinical meeting of the Winnipeg Dental Society was held on Monday, November 19, 1956.

Dr. Gordon Campbell, President, opened the meeting, and turned the morning over to Dr. M. J. Averback, the Clinic Chairman, who introduced the first speaker, Dr. I. M. Thompson, Professor of Anatomy and Chairman of the Department at the University of Manitoba. Dr. Thompson, who had previously taught dental students at McGill for seven years, was especially well qualified to present his subject—"The Anatomical Mechanism of Dental Pain and Associated Neuralgias".

At the conclusion of Dr. Thompson's talk a luncheon was held, attended by both Dr. Thompson and Professor D. McDougall, speaker for the afternoon.

The Society business meeting was held immediately after the luncheon. The most

interesting item of business was a well-discussed motion to form a committee to study the dental health of Winnipeg school children, possibly as a pre-fluoridation survey.

The President opened the afternoon meeting by again turning the chair over to Dr. Averback, who warmly introduced Professor Dougal McDougall, Director of the School of Pharmacy of the University of Manitoba. Dr. McDougall spoke on "Dental Therapeutics". At the conclusion of his paper, Dr. McDougall was thanked by Dr. T. J. Cooke for the knowledge and ability, care and effort of his well delivered presentation, which included a printed copy of his paper for each member.

The meeting adjourned at 5.00 p.m.

Nova Scotia

Annapolis Valley Dental Society

The annual supper meeting of the Annapolis Valley Dental Society was held at the Cornwallis Inn, Kentville. New officers were elected as follows:

President: Dr. B. D. Lavers, Kingston.

Vice-President: Dr. L. B. Layton, Annapolis.

Sec.-Treas.: Dr. Harris Young, Kentville.

Executive: Dr. Karl Eaton, Kentville.

The out-going president, Dr. Lebbeter, Berwick, thanked the members for the co-operation of the past year. He inducted the new officers.

Plans for an even more active year were laid.

Ontario

London and District Dental Society

The third stated meeting of the London and District Dental Society was unusual in that six members were clinicians for a most enjoyable evening.

Six members of the Orthodontic Study Club of the Society, Dr. P. E. Currie, Dr. J. A. Guest, Dr. J. G. Millar, Dr. J. A. Reid, Dr. J. B. Taylor and Dr. R. J. Wainwright presented a comprehensive illustrated clinic entitled "Interceptive Orthodontics for the General Practitioner". A mimeographed summary had been carefully prepared and was distributed to each member prior to the presentation.

This subject has been under study for the past three years by this group under the direction of Dr. D. A. Campbell and Dr. D. C. Way, prominent local orthodontists who have given most generously of their time and skill to the group.

This Study Club has presented a clinic at the Detroit District Dental Society Annual Review and will give a similar clinic at the annual meeting of the Canadian Society of Dentistry for Children, this May in Toronto.

During the business meeting the following members were elected to the Dental Public Health committee for a three year term, Dr. J. C. Millar, Dr. D. E. Cousins and Dr. H. G. Marshall.

At a business meeting held on January 23, 1957, Dr. D. A. Campbell, Chairman of the Constitution Committee, presented a proposed Constitution which was ratified by the members. The name of the society was changed from London Dental Society to the London and District Dental Society.

Toronto Academy of Dentistry

The Academy of Dentistry of Toronto held its first stated meeting in Osler Hall on Thursday, January 24th. Dr. Harvey Milburn president, presented the guest speaker Dr. Jay H. Eshleman, D.D.S., F.A.C.D., Temple University lecturer in practice management. This lecture contained material, the essence of which must of necessity form the backbone of every successful practice. Dr. Eshleman was complimented by the incoming president, Dr. R. Marshall. Our journal is privileged in this issue to publish this lecture so that all may benefit.

E.R.B.

Quebec

Montreal Endodontia Society

On December 3, 1956, Dr. Ralph Edmison addressed the Montreal Endodontia Society. His subject was "Oral Pathology" with specific reference to those tissues involved in Endodontics. Dr. Edmison discussed the pathologic changes that occur in the pulp in a pulpitis, pulp necrosis through to a periapical involvement. In the early part of his talk he demonstrated by means of slides, various cellular manifestations—such as the presence of bacteria in dentine, the hyperaemic stage of pulpitis, the localized abscess formations in acute partial pulpitis with the attendant distribution of inflammatory cells in the neighbouring area, a blood vessel in

a state of acute inflammation, the appearance of the pulp in a state of acute total pulpitis, and chronic pulpitis.

Then, by means of a special type of projector, it was possible to see microscopic slides at various manifestations demonstrating such interesting conditions as a chronic periapical abscess, pulp stones and a pulp polyp.

Dr. Edmison's talk was well received, stressing as it did the importance of relating common clinical symptoms to the actual cellular pathological changes.

F.V.

Montreal Dental Club

The 59th Annual Meeting of the Montreal Dental Club was held in the Queen's Hotel on Monday, January 21, 1957. After the dinner and before the meeting was officially underway, Dr. A. T. Donohue welcomed and introduced the new members—Drs. A. F. Capelli, A. P. Crevier, H. Husulo, D. Kepron and H. Smart—all Montreal residents—and D. Beauprie, non-resident.

Following the reading of the minutes of the last meeting by the club secretary, Dr. R. Lefebvre, Dr. E. T. Bourke passed on to the members the warm regards of the Montreal Dental Club's only remaining charter member, Charlie Morison.

The annual reports for 1956 were presented:

Dr. Pye, treasurer of the club, presented the financial report for the past session.

Dr. Dohn, chairman of the golf committee, reported on the golf meets held in the Spring at Knowlton, and in the fall at Rosemere.

Dr. Ward, chairman of the Fall Clinic, thanked all those who helped to make it so successful and encouraged members to contribute to the coming Fall Clinic to be held in October.

Dr. Kelly, chairman of the insurance committee, gave his report and informed the club members of the insurance plans now available to them.

Dr. Bourne, as Historian and Archivist, submitted his annual report on the club and members' activity.

Dr. Dorion reported for the College of Dental Surgeons of the Province of Quebec.

Dr. Racey, the President-Elect of the Canadian Dental Association, briefly informed the members of the news from C.D.A. Headquarters.

Dr. A. T. Donohue, as retiring president, thanked all those who assisted him in the past year, and wished the incoming executive every success.

Following the reports, the election of the officers of the club took place:

Honorary President—Dr. A. T. Donohue.
President—Dr. E. T. Cleveland.
President-Elect—Dr. R. F. Harvey.
Secretary—Dr. R. A. Lefebvre.
Treasurer—Dr. A. E. Pye.
Historian and Archivist — Dr. C. C. Bourne.

Directors for two years

Dr. O. Fredericks.
Dr. M. Hebert.
Dr. D. Henry.

Directors for one year

Dr. R. Ryan.
Dr. S. Smaill.
Dr. W. Swiston.

Dr. A. J. Schutz has taken over the post of Associate Editor of the C.D.A. Journal for the Province of Quebec, and W. D. Sanders has become the Montreal Dental Club reporter.

The following were presented for Honorary Memberships: Dr. G. S. Veith, Dr. E. Laurin, Dr. N. Blacklock, Dr. G. Hale and Dr. D. Crowe.

The Annual Winter meet, in the very capable hands of Dr. P. L. Lefebvre, was arranged at the Chantecler, St. Adele en haut, from Friday, February 1st to Sunday, February 3rd.

Just before the meeting was adjourned, Dr. Richardson proposed a vote of thanks to the outgoing executive for their most efficient handling of the Club affairs during the past year.

W.D.S.

Montreal Orthodontic Society

The annual meeting of the Montreal Orthodontic Society was held February 4th at the Berkley Hotel.

Officers for 1957 are:
Past President—Dr. Louis Lepine.
President—Dr. Gordon Kelly.
Vice-President—Dr. Albert Colle.
Secretary-Treas.—Dr. Howard Oliver.

Dr. Anita Mendel, Dr. Charles Asselin, and Dr. Howard Oliver presented some interesting cases followed by a general discussion. The next meeting will be held on March 11, 1957.

All Montreal Orthodontists were urged to attend the C.D.A. Orthodontic Section meeting at the Convention in Winnipeg, June 23-26th. Dr. Holly Halderson is this year's Grieve Memorial Lecturer.

H. T. O.

Saskatchewan

Registrar-Secretary-Treasurer

Upon the superannuation of Dr. L. J. D. Fasken as of Dec. 31, 1957 he was succeeded by Dr. Fred Smith of Saskatoon.

Dr. Fasken, F.A.C.D. who is well known across Canada for his outstanding contribution to the profession, was appointed Secretary of the Saskatchewan Dental Council in 1907. He was President of the Western Canada Dental Society and was honoured by having an oil portrait of himself hung in the University of Saskatchewan.

His successor, Dr. Fred Smith of Saskatoon, has served in many capacities in the interest of the profession. He has been on the provincial Dental Council for many years and served as the President of the Council. Also, he served for several years on the Board of examiners. He also is vitally interested in the profession of Dentistry and also personally in all the members.

To the C.D.A. Executive

It is a source of pleasure to announce that Dr. J. P. Whyte of Swift Current, Sask., has been elected to the C.D.A. Executive. He has served many years on the Saskatchewan Dental Council as member and as President, and also as a member of the C.D.A. Board. Congratulations Dr. Whyte.

Saskatchewan Dental Association Clinicians

The association this year sent Dr. R. S. Van Alstine on a clinical tour of the province on the subject of Oral Surgery. Dr. Van Alstine is lecturer in Oral Surgery at the Faculty in Edmonton. He is a Western boy who has made a real success of his career, and was fully appreciated by all that were so fortunate to see and hear his clinic.

L.D.H.

IN MEMORIAM

Ryerson Putnam Long — Dr. Ryerson Putnam Long of Fredericton, New Brunswick, died on May 26, 1956. He was in his eightieth year.

Dr. Long was born and received his early education in the city of Fredericton. For many years he was employed as a dental technician to Dr. Fred Barbour in that city. In 1917 he received his dental degree from the Faculty of Dentistry at Harvard University. For a short time he practised in New Glasgow, Nova Scotia. He returned to Fredericton in 1918 where he remained in private practice until his retirement, due to ill health, in 1954.

He was a member of the Hiram Lodge No. 6 F. & A.M., being made a life member in 1954. He was also a member of the Fredericton Royal Arch Chapter and the Fredericton Preceptory. He is survived by his wife and one daughter.

Ben L. Kushnerov — Dr. Ben L. Kushnerov, 41, a Winnipeg dentist, died suddenly on January 8, 1957. Dr. Kushnerov was born in Melville, Saskatchewan, and moved to Winnipeg at an early age. He graduated from St. John's Technical High School and later the Faculty of Dentistry, University of Alberta. He practised at Beausejour, Manitoba, for several years and then moved to Winnipeg to carry on his practice in the Boyd Building.

Dr. Kushnerov was a member of the Manitoba Dental Association. He was active in communal organizations, and was a member of the Shaarey Zedek Synagogue, B'nai B'rith, Mount Sinai Lodge of the Masonic Order and Alpha Omega Dental Fraternity.

Arthur P. Daly — Dr. Arthur P. Daly died recently in Radisson, Saskatchewan.

Dr. Daly graduated from the Royal College of Dental Surgeons of Ontario in 1921 and practised in Radisson since 1922. He was a prominent member of the Knights of Columbus, 4th degree. He served for two years in the R.C.D.C. during the Second World War.

Dr. Daly is survived by his widow and a son, Dr. A. J. Daly of Kindersley.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th
1959	Halifax, Nova Scotia	June 21st-24th
1960	Ottawa, Ontario	———

FUTURE EVENTS

Date	Function	Location	Officer	Address
May 12-15 1957	Ontario Dental Assoc. Convention	Toronto, Ont.	Mrs. R. E. Booker	234 St. George St. Toronto 5, Ont.
May 16-18 1957	British Columbia Dental Assoc. Convention	Empress Hotel Victoria	Dr. Ross Upton	Executive Secretary, 217 Medical Dental Bldg. Vancouver 1, B.C.
May 29-June 1st, 1957	American Academy of Dental Medicine Annual Meeting	Hotel Sheraton Plaza, Boston, Mass.	Dr. A. Gold, Chairman	Maple Street, Springfield 3, Mass.
June 10, 11, 12, 1957	Maritime Dental Convention	Moncton, N.B.	Dr. G. Cormier	120 Queen St., Moncton, N.B.
Aug. 3-4, 1957	Fifth Annual Roentgenology Workshop	Vancouver, B.C.	Dr. O. F. Wright	Secretary-Treasurer, 4014 Cambie Street, Vancouver, B.C.
Aug. 19-22 1957	Pacific Coast Dental Conference	San Diego, California	Dr. C. W. Gilman, Secretary,	219 E. 8th Street, National City, California
Sept. 7-14 1957	Congrès de la Fédération Dentaire Internationale.	Rome, Italy	G. H. Leatherman	Secretary, London, England

SHORT GRADUATE COURSES

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3, 1957 **Enrolment Limit 12**

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fracture of the jaws, cysts, root resections, abnormal frena, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee $100.00

For further information and application forms address inquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto, Ontario.

MONTREAL ENDODONTIA SOCIETY

Two day Endodontia Session at McGill University, Montreal, April 11th and 12th.

Clinician: Dr. B. Nygaard Ostby, Norway

Fee: $25.00 Limited Accommodation.

Write: Dr. D. J. Munro, Secretary-Treasurer, Montreal Endodontia Society, 1410 Guy Street, Room 14, Montreal, P.Q.

Volume 23
Numéro 3
Mars 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Les traitements radiculaires avec l'ionophorèse*

par I. L. FEINCHNEIDER, D.D.S., Montréal.

"Le microbe n'est rien, c'est la défense de l'organisme qui est essentielle."

Le problème de certains traitements endodontiques tels que la gangrène pulpaire et granulomes peuvent se résoudre par l'ionophorèse.

Nous n'avons évidement pas attendu l'ionophorèse pour traiter ces genres d'infections, mais ceux-ci étaient accomplis avec difficulté et devenaient impossible à traiter dans certaines régions lorque les canaux sont inaccessibles; c'est pourquoi la plupart des praticiens préfèrent l'extraction systématique de ces dents capricieuses.

Il s'agit donc de pénétrer les tissus endodontiques, bien que l'ionophorèse ne soit pas un courant électrique guérisseur, mais plutôt un procédé par lequel on peut introduire des ions dans l'endodonte; il permet une désinfection efficace de toutes les parties inaccessibles des canaux radiculaires.

Le traitement devient par ce fait chimique ou électro-chimique et non électrique.

Le courant de basse fréquence a également une action thérapeutique, mais en supplément, lorsque employé sous forme de diadinamothérapie, active la stimulation des tissus périapicaux ainsi que leur régénération.

Les caractéristiques chimiques de l'ionophorèses sont:

1) Aucun médicament n'est nécessaire pour le traitement.

2) Les ions OH-sont produit par les électrolyses des éléments organiques contenus dans le canal radiculaire.

3) Les ions OH-ont la propriété de dissoudre les éléments organiques des canaux inaccessibles et secondaires. Après cette lyse, une obturation parfaite de tous ces canaux peut se faire avec la pâte expansive Radiocalex.

Les électrodes

L'électrode négative produit des ions OH-par l'électrolyse du milieu organique.

* Communication présentée à la Société d'Endodontie de Montréal, février 1957.

Cette électrode est un tire-nerf usuel introduit dans le canal qui produira les ions OH- qui sont basiques. (Na+HOH= NaOH+H.) Tandis qu'avec l'électrode positive en platine (un fil simple de platine), elle produit des ions H qui sont acides. (4 CL 2 HOH 2 HCL O2)

Il importe donc de faire un bon diagnostic, à savoir s'il y a perte de vitalité par infection (carie), *ce sera par acidose,* ou encore mortification par micro-traumatismes fréquents et répétés, mortification sous obturations insuffisamment isolées, surtout porcelaines synthétiques, *ce sera par alcalose.*

Il s'agit alors de rétablir le pH favorable du milieu, avec les ions H dans les cas d'alcalose ou les ions OH- dans les cas d'acidose.

Technique opératoire

1) Il est fondamental de procéder au nettoyage mécanique de tous les canaux accessibles avec les limes usuelles.

2) Pour les canaux inaccessibles, la thérapie chimique s'impose.

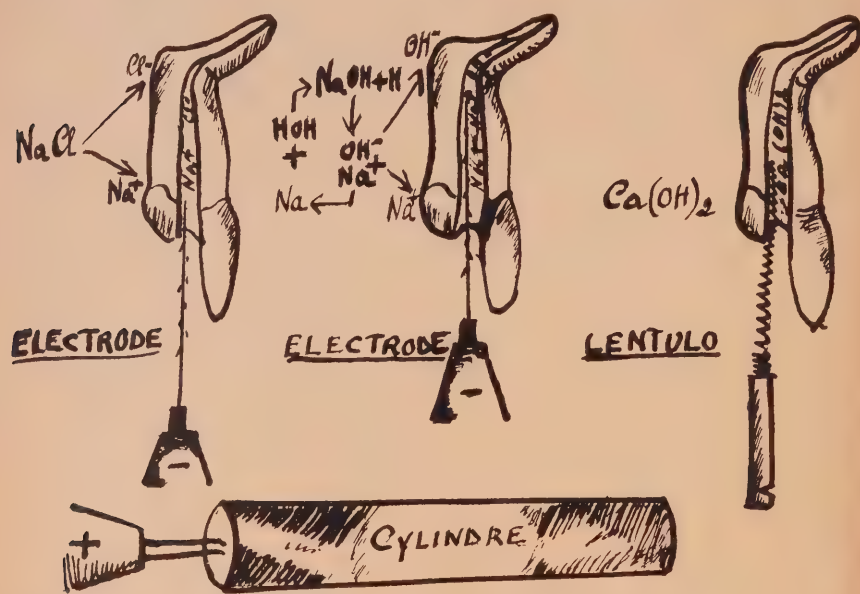
Pour les cas d'acidose

a) Avec l'ionophorèse, après avoir fait le nettoyage mécanique des canaux accessibles, chacun d'eux est lavé avec 1 c.c. de peroxyde à 3% et ensuite avec 1 c.c. d'eau distillée, débarrassant ainsi les fragments produits par les limes à canaux et laissant le milieu alcalin.

b) L'électrode négative, à laquelle on fixe un tire-nerf, est introduite dans la chambre pulpaire, et, pendant que le nombre de décicoulombs augmente, on atteindra progressivement l'apex, obtenant ainsi une stérilisation totale de la racine. Pour les cas de gangrène pulpaire simple, 3 décicoulombs sont suffisants. S'il existe un granulome à l'apex, 4 à 6 décicoulombs seront nécessaires.

Pendant cette phase, une mousse visible peut se produire en dehors de la dent; elle devra être asséchée avec du coton pour éviter toute obstruction du canal.

c) Avant l'obturation du canal, ce dernier sera asséché avec des pointes de papier stérile et l'obturation sera faite



avec la pâte expansive Radiocalex, au moyen d'un Lentulo (bourre pâte) dans le canal, (cette vrille s'adapte sur toutes les pièces à mains ou angles droits qui bourre la pâte à obturer dans le canal pendant sa rotation).

Pour les cas d'alcalose

a) Avec l'ionophorèse, après avoir fait le nettoyage mécanique des canaux accessibles, chacun d'eux est lavé avec 1 c.c. de HCL à 5%, ce qui débarrasse les fragments produits par les limes et laisse le milieu acide.

b) A présent, c'est *l'électrode positive* sur laquelle on fixe un *fil de platine* qui sera introduite dans le canal radiculaire, jusqu'a obtention des 3 décicoulombs pour atteindre un pH en dessous de 7.

c) L'obturation au Radiocalex peut rétablir le pH basique voulu, ou encore, tel que préconise Bernard, quelques heures plus tard après avoir produit les ions H acide, on réverse les pôles et on traite la dent tel que décrit pour les cas d'acidose.

Action de l'ionophorèse (cas d'acidose)

Pendant que l'électrode négative (tirenerf) est placée dans la chambre pulpaire, l'électrode positive constituée d'un cylindre métallique est tenu dans une main du patient.

Le courant agit de manière suivante: l'NaCL du milieu radiculaire se compose d'ions Na et d'ions CL—; par conséquent, les ions CL—sont repoussés vers l'apex, tandis que les ions Na sont attirés vers l'électrode négative; nous obtenons alors deux courants d'ions allant en directions opposées.

Les ions Na, en approchant l'électrode négative, perdent leurs charges électriques et deviennent des atomes de Na métalliques (électrolyse primaire), ces atomes de Na en contact avec le milieu organique réagissent en décomposant l'eau pour former la soude caustique (Na HOH NaOH H) (électrolyse secondaire).

La soude caustique ainsi formée donnera des nouveaux ions Na et OH— qui auront encore deux courants d'ions allant en direction opposée, et, cette fois, ce seront les ions OH— qui se dirigent vers l'apex pour substituer le Cl— et former une source d'ions OH— qui pénètre les canaux. Par la répétition du Na, qui devient à nouveau atome Na+HOH= NaOH+H et ainsi de suite Na+OH—, le cycle s'est ainsi formé.

Ces ions OH—qui sont bactéricides ont un pouvoir pénétrant 3 fois plus rapide que l'I[3]; par conséquent, l'application avec les ions OH— est cinq fois moins longue, puisque la durée sera de 3 minutes, au lieu de 15 minutes avec l'I[3].

L'action des ions OH—dans le voisinage apical est une troisième manifestation de l'électrolyse.

Les ions OH—aident au nettoyage des canaux par leur pouvoir de désintégrer les molécules d'albuminoïde, en les rendant plus simples et solubles, en soponifiant les acides gras; la dissolution des parois de la dentine se fait sur une mince couche, ce qui nous donne une véritable ouverture électro-chimique des canaux inaccessibles et abbérants.

Le résultat est que les ions OH— en plus d'être bactéricides produisent une lyse; cette liquéfaction du contenu nous permet par la pâte expansive de faire une obturation complète des canaux radiculaires.

Cette expansion peut se contrôler 48 h. après l'obturation, par la radiographie.

La régénération tissulaire

Les ions OH— ne sont pas à proprement parler bactériostatiques, mais par l'ionophorèse, ils liquifient le contenu des canaux inaccessible, alors que tout autre médicament en usage, même bactériostatique, ne peut les atteindre qu'avec difficulté ou pas du tout.

Comme le dit Bernard, l'essentiel est d'atteindre les bactéries; il n'est pas nécessaire d'avoir des agents bactéricides extraordinaires: l'action chimique des ions OH—est suffisante.

La conception première est bien différente de celle appelée "classique", qui con-

sistait en la considération suivante: une dent s'infecte par une résistance particulière microbienne contre laquelle il faut trouver un antiseptique ou antibiotique extraordinaire.

L'état morbide est simplement causé par une situation cryptique des microbes qui eux sont protégés contre les agents bactericides et ce, dans les anfractures et ramifications apicales de la dent.

Par l'ionophorèse, nous avons l'avantage de conduire nos ions OH–dans ces régions inaccessibles sous forme d'antiseptiques légers.

Dans le milieu apical, les ions OH—ne produisent aucune action bactéricide; pour ce faire, il nous faudrait une trop grande quantité d'ions et ceci causerait des brulûres caustiques sur les tissus en contact.

Tandis qu'avec les tissus sains autour d'un granulome, on a cette défense possible. C'est la seconde conception qui doit être considérée. Comme on le dit en médecine, le microbe n'est rien, c'est la défense de l'organisme qui est essentielle.

Alors qu'il existe dans une dent un milieu qui n'a pas pu produire une action défensive, il n'en est pas de même dans la région apicale, dans laquelle une défense organique est effective.

Malheureusement, presque tous les médicaments en usage produisent une inhibition de cette défense, laissent les tissus dans un étât léthargique dans lesquels les bactéries vivent plus ou moins confortablement pour procurer enfin l'infection chronique. C'est encore par cause de cette inhibition de défense que ces tissus prennent beaucoup de temps à se réabsorber et se régénérer.

Les ions OH- n'ont pas d'action toxique, puisque légèrement concentrés dans la région apicale dans leur diffusion, ils causent simplement une élévation du pH à 8 ou 9 (alcalin) alors que les tissus infectés ont toujours un pH inférieur à 7 et précisement cette alcalinité d'environ 9 est défavorable à l'évolution microbienne.

Elle est par contre favorable à l'activité leucocytaire qui est absolument nécessaire au processus de régénération osseuse.

En conclusion, l'usage des médicaments usuels maintient le pH en dessous de 7 et ainsi retarde la régénération.

Alors que les ions OH- entame la régénération par l'élévation du pH à 9.

Et cette alcalinité est maintenue par l'emploi de l'Hydroxide de calcium (Radiocalex), comme pâte d'obturation radiculaire.

A titre d'information, on peut lire dans le Journal de l'Association dentaire canadienne (novembre 1954, page 619), les avantages et désavantages sur l'usage des antibiotiques en endodontie. (Bender et Seltzer).

L'activité bactéricide des antibiotiques est transférée sur des pointes de papier pendant la prise de culture.

Alors qu'aucun inactivateur n'a été développé pour certains antibiotiques en usage en endodontie, la validité des cultures négatives bactériologiques deviennent une interrogation.

Des petites traces d'antibiotiques, particulièrement lorsqu'elles sont une combinaison d'antibiotiques, peuvent produire une inhibition de croissance dans le tube de culture.

Une culture négative doit être considéré douteuse dans 13% des cas (de G. L. Salck: "Bacteriology of Infected Root Canals and in Vitro Penicillin Sensitivity," Year Book of Dentistry, page 37, 1955).

Sur 514 canaux radiculaires, 405 cultures pures ont été obtenues. Deux organismes étaient présents dans 95 cultures et trois organismes dans 14 cultures. Les steptococques alpha et gamma étaient les plus fréquents.

A présent, que devient la résistance organique aux antibiotique, dans la région dentaire?

Il a été prédit que les infections radiculaires seraient de plus en plus résistantes aux antibiotiques. (S. Blhman, New York State Dental Journal, Sept. 1955).

5757 Decelles

VUE DE SHERBROOKE

Congrès Provincial

de l'Association Dentaire du Québec

à l'Hotel Sherbrooke

Sherbrooke, P.Qué.

le 27, 28 et 29 mai 1957

L'esthétique dentaire (1)

par H.-A. YOUNG, D.D.S.

La Poésie et la Littérature ont affirmé depuis des siècles que les dents possèdent une beauté qui leur est propre et qu'elles contribuent également à l'embellissement du visage.

Les dents et la région buccale ont été fréquemment modifiées pour améliorer leur propre beauté, indiquer un air de supériorité, un état de puissance. Les sauvages ornaient leurs dents d'or et d'incrustations de pierres précieuses, ou modifiaient la forme de leurs couronnes par meulage. Les Annamites laquaient de noir leurs dents en signe de respectabilité. Les femmes indonésiennes laquaient leurs dents de rouge pour indiquer qu'elles avaient atteint l'âge du mariage, et les Américains désirent des dents blanches et claires pour leur beauté dentaire. Les principes de la beauté dento-faciale sont donc en rapport avec l'état de civilisation et l'habitat du malade.

Le terme "esthétique" a été créé en 1750, pour désigner la science des connaissances sensorielles qui donnent l'idée de beauté, en comparaison avec la science de la logique qui donne la vérité. Ce terme, en ces dernières années, est appliqué aux beaux-arts comme une théorie de la beauté. Dans les deux derniers siècles, on a recherché les caractères essentiels de la beauté, les observations ou "tests" par lesquels elle peut être reconnue et jugée, les caractères de son efficacité sur l'esprit humain.

Les divers sens actuels du terme "esthétique" sont aussi variables que le sont les particularités du mot sensibilité, sexualité, que le sont le nombre des nationalités et des races dans le monde, les faiblesses et les caprices de la jeunesse ou de la maturité.

C'est pourquoi, il faut s'attendre à ce que jouent toutes les facultés d'appréciation et de critique dont se montreront prodigues le patient et les proches qui l'examineront. Pour déterminer si ces contradictions dans les avis sont aussi fréquentes dans les rangs des maîtres de la prothèse qu'ailleurs, il nous faut donner quelques définitions de "l'esthétique", élaborées par des artistes, passés maîtres dans l'art dentaire, telles que celles-ci:

—l'esthétique c'est l'idéalisation et l'harmonisation de l'artificiel et du naturel;

—l'esthétique, c'est le retour à la dimension verticale normale;

—l'esthétique, c'est la mise en place normale des dents sur l'arcade, et la reproduction naturelle des contours gingivaux;

—les principes de base de l'esthétique sont la beauté, le naturel et l'originalité;

—il n'y a pas de formule pour désigner l'esthétique, c'est un champ d'action sévèrement individualiste;

—l'esthétique est la science qui tire de la nature les règles et les principes de l'art dento-facial;

—l'esthétique est une science aux règles bien définies, c'est aussi un art qui demande de l'habileté et du goût, joints à de sérieux principes esthétiques d'ordre général.

De telles définitions ne manquent pas de force convaincante. Pourtant on peut les considérer autant comme une preuve de désaccord que d'unanimité de leurs auteurs. Il est évident que la beauté, l'harmonie, le naturel et l'originalité sont des qualités de base essentielles; à cela s'ajoutent des qualités mineures qui, en donnant une touche finale d'un désordre léger, relèvent d'un art très réel. Un artiste est celui qui crée de belles choses en ne faisant qu'interpréter le souvenir de ses émotions et de ses sentiments. Une telle personne peut très bien ne pas savoir comment elle a créé son oeuvre d'art, car elle possède des dons innés et par conséquent les règles et les principes ne sont pour elle qu'une gêne. Pour qui n'est pas aussi favorisé par son instinct et ses dons, la science de l'esthétique et la pratique clinique développeront l'habileté et le sens du jugement nécessaires au succès.

(1) The Journal of Prosthetic Dentistry, novembre 1956.

Désires et souhaits du patient

Le dentiste doit savoir que les besoins de la denture des patients, la réalisation de ses nécessités et les désirs des patients ne concordent pas, ne sont pas toujours compatibles les uns avec les autres, en harmonie avec l'âge, le sexe, ni les principes mêmes de toute esthétique.

MILTON COHEN a démontré qu'il est difficile de ne pas tenir compte de l'aversion du patient pour une copie exacte de ses propres dents où l'on peut remarquer obturations et caries, dans le cas où il désire améliorer son apparence par des dents plus belles, plus blanches et mieux disposées.

De même, HOOPES a établi que "la profession dentaire va être obligé de produire de plus en plus de dentures esthétiques car le public a appris à apprécier la belle apparence des dents naturelles bien soignées, ce qui le rend plus porté à critiquer les dents artificielles".

Le dentiste doit être sensible au fait que le client veut éliminer de son visage les signes révélateurs de son âge, et c'est pourquoi l'attrait et l'apparence de la jeunesse sont souhaités, exigés; autant que faire se peut ils seront préservés. Les différences de teinte révélant l'âge véritable, les taches caractéristiques, les plans d'abrasion seront jugés indésirables et difficilement tolérés.

Il faut que le dentiste soit sensible au fait qu'une dimension verticale incorrecte produit des distorsions faciales, mais également au fait que le visage reflète des émotions internes, et cela provoque quelques insuccès. De telles anomalies faciales peuvent être radicalement modifiées grâce à des dentures convenables à dimension verticale correcte.

Les patients recherchent en plus de l'esthétique physique, l'esthétique fonctionnelle et la justesse de leurs expressions faciales. La considération que l'on a pu prendre des remarques du patient a rendu plus facile le travail du dentiste, et lui a permis de développer son goût esthétique et d'améliorer son génie créateur.

Problèmes pratiques

BROWN a établi que le patient se fait souvent accompagner par sa famille ou ses amis dont les vues diffèrent, ce qui complique sans nécessité le problème que le praticien aura à résoudre. De tels avis aussi divers préviennent le dentiste des problèmes auxquels les patients devront faire face quand ils se "produiront" chez eux ou chez des amis. Ces associés du patient tendent à simplifier, plutôt qu'à compliquer le problème d'esthétique, puisque finalement le dentiste pourra modifier sa prothèse avant de la terminer, évitant ainsi d'être obligé de la transformer après sa mise en place.

Le dentiste ne doit pas imposer à son patient l'acceptation d'une denture irrégulièrement disposée, ou d'une teinte plus en rapport avec son âge, si le patient réclame de petites dents blanches d'un niveau égal et d'une disposition symétrique. Pas davantage, le dentiste ne doit obliger son patient à accepter une qualité déterminée de prothèse, si cela doit lui attirer de perpétuelles réflexions blessantes, de la part de sa famille ou de ses amis.

Les caractères essentiels, ou "valeurs", esthétiques

Le dentiste doit savoir que les prétentions et les objectifs de l'esthétique en art dentaire sont différents des prétentions esthétiques d'ordre général. L'esthétique des dentures réclame des "valeurs" qui retiennent peu l'attention alors que l'esthétique dans les autres domaines artistiques, demande généralement jusqu'à un certain point, des conditions plus attentivement respectées. Les dents naturelles, d'aspect naturel, s'imposent avec force à l'observateur, alors que les dents artificielles doivent être discrètes et s'harmoniser avec les données fonctionnelles et physiques du visage.

Le dentiste devra apprendre à analyser les facteurs de beauté faciale d'un patient édenté en appliquant les canons de la beauté et leurs mesures. Cependant HARDY affirme "l'esthétique en matière de denture ne se réduit pas à une simple

formule", et RICHEY ajoute "l'artiste qui réussira le mieux, sera celui qui déterminera ses données par instinct, en s'appuyant sur ses expériences antérieures". SEARS, lui, dit "il est peu de domaines d'essais, même dans l'art, qui ne se prêtent à l'analyse".

LOWRY soutient que "l'art dentaire est la théorie ou la mise en pratique d'une esthétique particulière basée sur la beauté des formes, le choix judicieux de la disposition et de la couleur des dents, et sur l'expression du visage".

Pendant des siècles la recherche s'est faite en fonction des réactions de l'homme vis-à-vis de la beauté, et des qualités physiques qui caractérisaient un bel objet. C'est ainsi que l'harmonie et la discordance, l'équilibre et le déséquilibre, la symétrie et l'asymétrie, les formes, les couleurs, les tonalités, le mouvement, sont considérés comme des qualités déterminantes et employés plus ou moins universellement pour apprécier la beauté d'une oeuvre d'art. Lorsque ces données s'éloignent d'une valeur moyenne elles se rapprochent de la laideur, contrepartie nécessaire de la beauté.

Des recherches sur les conceptions de la beauté dento-faciale qui sont celles des patients, ont été poursuivies par des prothésistes, des orthodontistes et des chirurgiens de chirurgie esthétique. SEARS a établi que les facteurs artistiques en relation avec l'esthétique dentaire peuvent se classer en trois rubriques: visage, dents, gencives. MOLLER préconise une analyse fondée sur des principes artistiques généraux qui ont trait au visage et sur des données artistiques mineures qui ont trait aux dents et à leurs assises.

1° *Physiques.* — Les points suivants déterminent la beauté du visage:

a) la forme générale,
b) les proportions du visage en rapport avec les divers étages de la face,
c) le profil,
d) le contour,
e) les dimensions de la bouche, la forme et les dimensions des commissures, la forme des angles de la bouche,
f) l'épaisseur, la forme, la courbe, la proéminence, la tension des lèvres,
g) les plis ou rides du visage,
h) l'écart interpupillaire,
i) la largeur des narines,
j) la position dans l'espace des éléments constitutifs du visage: nez, yeux, bouche, menton,
k) l'impression générale du visage.

2° *Dimension verticale.* — C'est là une donnée importante à la beauté du visage, au point de vue de la prothèse dentaire comme de l'esthétique et nous désirons nous y étendre. Des changements dans la dimension verticale modifient les relations physiques et fonctionnelles, ce qui change les données esthétiques. Des valeurs arbitraires de dimensions verticales ont été recommandées à diverses époques, mais cette valeur est aujourd'hui considérée comme spécifique du patient en traitement, et aussi importante pour la beauté du visage que pour les relations fonctionnelles des maxillaires. Une dimension verticale incorrecte peut modifier à un tel point les valeurs physiques du visage et de la bouche, que toute apparence esthétique disparaît.

3° *Valeur fonctionnelle du visage.* — De nombreux auteurs ont remarqué que des muscles qui fonctionnent de façon incorrecte déforment les traits du visage, ce qui déconcerte le patient en créant des expressions sans caractère. La dimension verticale et les bases de la denture ont une grande influence sur les fonctions exo-buccales et sur l'apparence du visage animé.

Une dimension verticale trop courte, une base incorrecte, des dents antérieures lingualées, font plisser et saillir à la fois les lèvres, déterminant ainsi un mouvement anormal de celles-ci, inesthétique et déplaisant.

Un menton dont le mouvement se fait trop en avant lors de la conversation produit, lors de la déglutition notamment, un effet grognon, revêche, tout à fait désagréable à l'oeil, et qui fait penser au faciès du bouledogue.

La fonction des muscles de la paupière, si elle vient à être troublée par l'altération des muscles faciaux, produit des "pattes d'oie" au canthus externe, et af-

faisse les paupières supérieures, ce qui a pour effet de donner au visage une apparence endormie, inconsciente et, dans le cas des hommes, une apparence féminine inesthétique et indésirable.

Une expression douloureuse du visage, gênée, que l'on attribue souvent à la denture peut provenir d'une autre donnée physique du visage qui altère les caractères fonctionnels.

Plus d'une ride, d'une joue déformée, sont dues à des déficiences dentaires qui provoquent un relâchement musculaire et tissulaire, ce qui diminue dans de fortes proportions la beauté du visage et le vieillit.

4° *L'ampleur de la bouche et des lèvres.*—Autrefois, plusieurs artifices étaient utilisés pour soutenir la zone buccale car les dentistes avaient alors tendance à réduire la dimension verticale. Les travaux de Thompson et Brodie sur les groupes musculaires et leurs relations en chaîne, ceux de Brown et d'autres prothésistes portant sur la nécessité de conserver aux muscles fonctionnels une longueur normale afin d'améliorer les expressions du visage, ont rendu désuets les artifices de restauration de l'esthétique faciale. L'opérateur doit tenir compte du profil de la zone buccale pour constater qu'il s'insère tout naturellement dans le profil général et qu'il en est rarement indépendant.

Le dentiste, en tant qu'esthéticien du visage et spécialiste de la santé buccale, doit juger avec soin des caractères esthétiques de la denture dont il s'occupe, connaître les exigences requises, et préjuger des améliorations ultérieures, quand les dents seront mises en place. Il est clair que des conditions tant fonctionnelles qu'esthétiques entrent en digne de compte quand il s'agit d'esthétique faciale.

Facteurs endo-buccaux et dentaires

Les qualités esthétiques de cette zone endo-buccale se partagent entre les caractéristiques dentaires et les carcatéristiques gingivales. Il nous paraît erroné de verser ce groupe de facteurs parmi les mineurs étant donné leur importance dans la partie inférieure du visage.

1° *Caractères esthétiques de la dent.*—Les dents utilisées doivent plaire et être belles dans la mesure de leur rôle esthétique, produire un effet de naturel et d'originalité, s'insérer naturellement dans le visage et la bouche pour contribuer à la beauté dento-faciale. Les caractères esthétiques des dents du maxillaire inférieur, antérieures ou postérieures, se rattachent plus aux conditions générales de leur arrangement qu'aux caractéres particuliers de chaque dent, comme nous allons le voir.

Dimensions des dents.—L'incisive centrale supérieure doit être en harmonie avec les dimensions du visage: les gros visages demandent de grandes dents et les petits, des petites. Les dentistes ne se rendent souvent pas compte combien on remarque une incisive supérieure mal proportionnée, et au contraire combien une heureuse proportion produit un heureux effet. Les patients ont l'impression que les petites dents sont plus belles sans tenir compte que les dimensions de leur visage et son attrait sont en rapport avec les dimensions des dents. La règle générale est qu'il faut avoir des incisive centrales plus larges que les latérales, en tenant compte, bien entendu, des nécessités de chaque cas. Un tel procédé permet de satisfaire à la fois, le dentiste, le client et leurs critiques.

Contour de la dent.—Il doit s'harmoniser avec celui du visage. Les formes courantes du visage se rapprochent du triangle, du rectangle, de l'ovale, et dépendent du squelette et des tissus qui le recouvrent. Celles-ci varient au cours des âges de la vie, dans une certaine mesure, et cependant l'âge biologique de la denture des patients annule en grande partie l'influence de ces tissus.

Proportions des dents.—Les proportions en longueur et largeur doivent être semblables à celles du visage. C'est pourquoi l'harmonie exige que les proportions de la future incisive centrale soient celles du visage édenté du patient considéré.

Profit de la dent.—Le profil de la dent sera de préférence en harmonie avec la courbe du profil du visage. Cependant cette règle n'est pas immuable.

Surface de la dent.—Elle sera lisse ou rugueuse selon que le visage sera lui-même rude ou sans traits accentués. L'évaluation de ces caractères faciaux dépend autant de l'état émotionnel du patient que du propre jugement du dentiste. Une surface lisse sera volontiers brillante et attrayante; une surface rugueuse, au contraire, éparpillera la lumière et se remarquera moins. Des surfaces plates et rugueuses produisent un effet de force et de masculinité, tandis qu'une surface lisse donne une impression de féminiinité.

Couleur de la dent.—Les patients ont souvent sur ce sujet des idées bien arrêtées et n'arrivent pas à se mettre d'accord avec leur dentiste sur la couleur de leurs dents. Les patients veulent avoir les couleurs éclatantes et sans taches de la jeunesse pour animer l'expression de leur visage, et se refusent à accepter les teintes foncées et diverses des hommes d'âge, même si ces dernières s'harmonisent mieux avec leur état. Le dentiste doit réaliser un compromis en se soumettant le moins possible aux désirs de son patient. Les couleurs peuvent servir à obtenir des dentures très seyantes car les jeux d'ombre et de lumière et l'éclat et la disposition des couleurs sont des modifications auxiliaires efficaces.

2° *Disposition des dents.*—Certaines dispositions caractéristiques des dents naturelles reviennent souvent et sont classées en différents types: carré, ogival ou ovoïde, bien connus. Les dentistes ont l'habitude de ces termes, pourtant nous pouvons les définir aussi bien en les classant en x, y, z.

On rencontre rarement une disposition purement typique et pourtant c'est à partir des differents types de dents que nous allons travailler pour faire nos arrangements. Originalité, naturel et beauté dans le modèle à réaliser résultent d'un heureux mélange, du choix judicieux dans la série des dents adoptées, des conditions particulières d'asymétrie respectées, dans l'accord fonctionnel avec les lèvres et les maxillaires. La faculté artistique est probablement mieux utilisée en créant un effet voulu par la disposition des dents que par le choix de leur modèle, cependant de l'art de ce choix dépend la facilité de l'arrangement des dents.

Modèles de dispositions typiques: disposition carrée.—Le modèle de cet arrangement est rectangulaire et les détails de la dent sont de moindre importance que dans les autres cas. Cet arrangement s'appelait autrefois "picket fence", en palissade. Ce type de disposition est caractérisé par sa régularité, son uniformité, sa symétrie, sa massiveté, ses larges surfaces plates, ses courbes adoucies. Les axes des dents sont verticaux et parallèles entre eux et les dents sont à un niveau approximativement égal. Les axes des dents postérieures droites et gauches sont parallèles et dépourvues de l'habituelle divergence de la zone distale. On trouve ce type dans environ 12% des cas.

Disposition ogivale.—Ce modèle de disposition est triangulaire avec des contrastes et des irrégularités. Les segments antérieurs de l'arcade convergent en avant, se rencontrant sur la médiane et formant en quelque sorte un angle aigu. Le bord des incisives est incliné vers le bas ou le haut, donnant une ligne d'incision irrégulière. L'inclinaison des axes dentaires est tantôt mésiale, tantôt distale avec une inclinaison labiale non négligeable; les dents ont des degrés divers de rotation, de malposition, de saillie horizontale ou de niveau vertical. Les dents postérieures ont une inclinaison linguale et le segment d'arcade latéral s'évase vers l'extérieur, également dans le région distale.

La disposition de ce type est dotée de toutes les variantes de détail, dont quelques-unes sont peu esthétiques, voire laides, et non utilisées. On trouve ce type dans environ 80% des cas.

Composition avoïde, ovale.—Ce modèle est incurvé et plaisant, les surfaces vesti-

bulaires des dents, curvilignes de la gencive au bord incisif, ce qui s'harmonise avec le profil du visage. L'arc des dents antérieures s'adapte à la courbe des dents postérieures d'une façon si parfaite que les angles de raccordement sont pratiquement nuls. Cet arrangement est caractérisé par un dépassement des incisives et des diastémes légers entre les incisives centrales et latérales. La ligne d'incision est sur un même plan et les dents antérieures n'ont de saillie ni dans le plan horizontal ni vertical. Ce type se rencontre dans 8% des cas. C'est donc l'un des cas les moins fréquents, bien qu'il soit celui qui donne les meilleurs résultats au point de vue esthétique.

3° *Caractères des tissus mous.*—La denture s'appuie sur les tissus gingivaux et muqueux de l'arcade. Cette base tissulaire contribue à l'esthétique du visage et de la bouche, en raison des caractères de son volume, de sa couleur et de sa surface.

Volume de cette base tissulaire.—Elle peut déformer les lèvres et déplacer les dents au point de créer une asymétrie inesthétique. Elle peut au contraire rembourrer judicieusement les lèvres et créer un effet réussi dans le cas de visages émaciés ou séniles. L'emploi de ce rembourrage factice n'est plus autant en usage qu'autrefois car on accorde une plus grande importance au fonctionnement correct des muscles faciaux.

Couleur des tissus.—Seuls queques-uns des vieux praticiens peuvent se rappeler les troubles et les déboires que causait la vulcanite rose. Les matériaux plastiques utilisés aujourd'hui ont une couleur et une transparence très acceptables, exception faite de quelques matériaux plastiques de qualité inférieure qui sont moins stables. Une pigmentation plus ou moins prononcée donnera à ces bases plus de caractère et de personnalité à l'aide de taches foncées ou claires de couleur et de filaments rouges. On pourra montrer son goût en utilisant les matériaux actuels sans trop de difficultés.

Surfaces de la base.—La création d'une ligne naturelle autour du bord gingival de chaque dent donne une apparence de vérité et la variation de ce facteur change l'apparence et la personnalité de la dent et de sa disposition. Des effets divers sont créés en exposant la dent plus ou moins à la vue, en réalisant un feston gingival plus ou moins courbe, en plaçant mésialement ou distalement le sommet de cette courbe, et par l'ouverture des embrasures interdentaires.

Sculptures. — La création de zones muco-gingivales renflées, indiquant la présence de racines, donne plus de naturel en réfléchissant la lumière.

Pointillés. — La réalisation de petits trous semblables aux pores permet également de mieux disperser la lumière ce qui améliore l'aspect physique et l'effet esthétique.

Polissage. — Quelques dentistes ont abandonné la pratique d'ultra-polissage de la surface des dentures. Un fini satiné, obtenu par soufflage de sable après polissage, atténue un peu le brillant de la surface et simule un léger pointillage.

Résumé

La denture esthétique ne se fabrique pas en série, car une telle denture est l'oeuvre d'un artiste, d'un artiste en dentures. Un tel homme posséde une habileté hors pair dans l'art de la prothèse et mérite qu'on le paie cher, car il y a peu d'artistes sur cette terre. Malheureusement la dentisterie artistique a une vie relativement courte car les volumes et les formes elles-mêmes s'abîment vite, *annihilant* l'effet esthétique primitif.

Les artistes en dentures de demain doivent comprendre que l'acuité de la perception et le sens de l'observation précise des qualités physiques d'un visage édenté, s'acquièrent grâce à une observation poussée de la beauté dento-faciale, et après de nombreux essais ou erreurs dans la création de dentures désirées. Si la lecture d'ouvrages, la présence aux conférences sur l'art et l'esthétique sont utiles, l'artiste doit apprendre à mettre en pratique ses principes et développer son goût.

Nouvelles de l'Association

Mémoire concernant les déclarations fédérales d'impôt sur le revenu des praticiens de l'art dentaire.

Pour la gouverne des praticiens exerçant la profession de dentiste et en vue d'uniformiser les renseignements à fournir à la Division de l'Impôt du Ministère du Revenu national dans les déclarations annuelles d'impôt sur le revenu, on a cru opportun d'exposer les faits suivants.

Revenu

1. Le dentiste devrait maintenir un état précis de ses recettes provenant d'honoraires professionnels ou de revenus de placements. Cet état doit être clair, pour qu'il soit possible de le vérifier facilement en regard de la déclaration produite. A cette fin, il conviendrait de tenir des livres de comptabilité et les garder jusqu'à ce que le Ministère du Revenu national donne une permission écrite d'en disposer.

Depenses

2. Sous le chapitre des dépenses, il importe de tenir à jour, à l'appui des frais invoqués, un état des comptes suivants sur des registres que l'on peut vérifier en tous temps:

(a) Fournitures dentaires et autres du même genre;

(b) Aide de bureau, infirmière, domestique et comptable, frais de blanchissage et primes d'assurance contre négligence et incurie; (A remarquer que la loi de l'impôt sur le revenu n'accorde aucune déduction à l'égard du traitement versé par le mari à son épouse ou vice versa. Si un tel montant est payé, il doit être rajouté au revenu)

(c) Dépenses de téléphone encourues pour usages de la profession;

(d) Honoraires des aides-praticiens;

On doit fournir, au plus tard le dernier jour de février de chaque année, les noms et adresses des aides à qui l'on a versé des honoraires, en se servant de la formule d'impôt sur le revenu, dite Formule T 4, que l'on peut obtenir en s'adressant au bureau de district de l'impôt sur le revenu. (Ne pas confondre cette formule avec la déclaration de revenu à l'usage des particuliers, Formule T 1, à produire au plus tard le 30 avril de chaque année);

(e) Loyers payés;

Il faut fournir le nom et l'adresse du propriétaire du local (de préférence) ou de son mandataire. (Voir (g));

(f) Frais de port et de papeterie;

(g) Dépenses proportionnelles des dentistes exerçant leur art dans leur résidence;

(a) Le dentiste en étant le propriétaire;

Lorsque le dentiste exerce son art dans une maison qui lui appartient et dans laquelle il a sa résidence, il est accordé une déduction proportionnelle des dépenses de la maison pour le cabinet, le laboratoire, le bureau et la salle d'attente, en tenant compte de l'espace total de la résidence. Les dépenses visées comprennent les taxes, l'éclairage, le chauffage, l'assurance, les réparations et l'intérêt sur l'hypothèque (donner le nom et l'adresse du créancier hypothécaire). Remarque en ce qui concerne la dépréciation, voir l'item 2 (m).

(b) Le dentiste en étant le locataire;

Le prix du loyer est reparti de même que le coût du chauffage et celui de l'éclairage, si payés par le dentiste; le propriétaire du local acquitte toutes les autres dépenses mentionnées ci-dessus (a).

Les déductions ci-haut mentionnées ne doivent pas dépasser le tiers des dépenses totales de la maison ou du loyer à moins qu'il ne soit prouvé qu'une déduction supérieure devrait être accordée pour des fins professionnelles.

(h) Frais divers (non mentionnés ailleurs);

Les frais postés à ce compte doivent être susceptibles d'analyse et accompagnés de preuves à l'appui.

Les réclamations faites par suite de dons consentis aux oeuvres de charité sont admissibles à concurrence de 10 p.c. du revenu net, provenant de toutes sources, à condition que les reçus en soient soumis à votre bureau de district de l'impôt sur le revenu. C'est là une stipulation de la loi.

On admet, à titre de frais, les contributions annuelles payées au Collège dont relève l'autorisation d'exercer la profession et les cotisations à titre de membre d'une association, si ces déboursés sont mentionnés dans la déclaration.

Les frais occasionnés par la fréquentation des cours postcolaires ne sont pas admis.

(i) Frais incidents;

Les versements d'intérêt effectués en raison d'emprunts sur titres déposés en nantissement ne peuvent être imputés qu'aux revenus provenant de placement et non au revenu dérivé de l'exercice de la profession.

(j) La taxe d'affaire est admise à titre de dépense, mais non les impôts sur le revenu;

(k) Dépenses d'automobile;

On admet les dépenses de taxis et d'automobile faites pour gagner un revenu dans l'exercice de sa profession, quand le dentiste doit se rendre au domicile de ses clients. Les frais de transport du dentiste entre sa maison et son bureau ne sont pas déductibles.

(l) Dépenses de congrès;

Selon un amendement à la loi approuvé en 1956 et s'appliquant pour 1955 et les années subséquentes, un contribuable peut déduire de son impôt des dépenses faites par lui-même pour assister à pas plus de deux congrès durant l'année et ce ou ces congrès doivent être organisés par un organisme professionnel dont il fait partie et porter sur un domaine d'affaires ou une profession qu'il exerce lui-même.

Pour justifier ses déductions pour ses dépenses de congrès, un contribuable doit déclarer dans un document attaché à son rapport d'impôt:

1) les dates du congrès;

2) le nombre de jours où il a été présent à l'aide d'un certificat de présence ou d'une attestation raisonnable de l'organisme responsable du congrès;

3) les dépenses imputables à ce congrès, en les classant séparément, telles (a) frais de transport; (b) repas et (c) chambre d'hôtel; au moins pour celles-ci, le contribuable doit garder des reçus et être en mesure de les produire, si on le lui demande.

Ceux qui tirent leur revenu de salaires ne peuvent pas déduire de telles dépenses, d'après la section 5 de la Loi de l'Impôt sur le Revenu.

(m) Dépréciation;

La page quatre de la déclaration d'impôt sur le revenu, formule T 1 Générale, explique les modalités de la dépréciation à réclamer en vertu de la Partie XI.

La méthode à employer pour calculer la dépréciation aux fins de l'impôt sur le revenu est semblable à celle de l'an dernier; vous ne devriez éprouver aucune difficulté, si vous disposez d'une copie de la déclaration de l'an dernier.

Après avoir déduit l'allocation de l'an dernier, vous reportez tout simplement le solde obtenu pour chaque catégorie. Ajoutez à ce chiffre le coût des nouveaux appareils achetés et déduisez le produit des dispositions de biens dans chaque catégorie. Le taux que vous voulez utiliser jusqu'à concurrence du taux maximum (voir ci-dessous) est appliqué au nouveau solde de chaque catégorie; c'est ainsi que vous établissez la dépréciation que vous pouvez réclamer, cette année.

Pour votre gouverne, nous reproduisons ci-dessous le tableau qui figure à la page 4 de la déclaration d'impôt sur le revenu.

Cédule

(1) Numéro de catégorie	(2) Total du capital non déprécié au début de 1955 (col. 10 du rapport de 1954)	(3) Coût des acquisitions en 1956	(4) Revenus provenants des ventes de vieux matériel

(5) Total du capital non déprécié avant l'allocation de 1955 (col. 2, plus 3, moins 4)	(6) Taux %	(7) Allocation sur le coût du capital pour 1956	(8) Total du capital non déprécié à la fin de 1956 (col. 5, moins col. 7)

Voici les taux maxima applicables aux catégories de matériel, qui intéressent davantage les dentistes;

Actif	Catégorie	Taux Maximum
Matériel dentaire y compris les instruments dont le coût s'établit à moins de $50.00....	12	100/p.100
Instruments dont le coût s'établit à moins de $50.00	12	100/p.100
Fournitures et accessoires de bureau	8	20/p.100
Edifice en pans de bois (bureau ou résidence utilisé à la fois comme logement et bureau)	6	10/p.100
Edifice en briques (bureau ou résidence utilisée à la fois comme logement et bureau)	3	5/p.100

Les instruments dont le coût s'établit à moins de $50.00 chacun sont compris dans la catégorie 12 et bénéficient d'un taux maximum d'allocation de 100 p. 100. Ces instruments ne doivent pas être portés au compte de dépenses, mais doivent être inscrits à titre d'addition dans la colonne 3 du tableau.

Lorsqu'un dentiste exerce sa profession dans une maison dont il est propriétaire et dans laquelle il a sa résidence, l'allocation peut-être réclamée comme il est indiqué ci-dessus sur une fraction du coût de la résidence à l'exclusion du terrain. Par exemple, si la résidence est un édifice en briques d'une valeur de $12,000 et qu'un tiers de

l'espace serve de bureau, le dentiste peut évaluer à $4,000 l'espace qu'il affecte à l'exercice de sa profession et y appliquer le taux de cinq pour cent, ce qui lui donnera la dépréciation maximum qui lui est accordée pour la première année.

Pour de plus amples renseignements à ce sujet, veuillez vous reporter aux règlements ou consulter votre bureau de district de l'impôt.

Paiement de l'impôt

3. Paiement d'impôt. Les individus, dont plus de 25% du revenu provient de sources autres qu'un salaire ou d'honoraires, doivent payer leur impôt annuel en versements trimestriels durant l'année courante, aux dates suivantes, 31 mars, 30 juin, 30 septembre et 31 décembre.

Dentistes à salaire

4. La loi de l'impôt sur le revenu permet certaines déductions du salaire. Ces déductions comprennent des dépenses de voyage, les cotisations professionnelles annuelles, le loyer d'un bureau, des salaires à des assistants ou des remplaçants et des fournitures utilisées directement dans l'exercice des fonctions. Il faut toutefois certaines conditions pour l'allocation de ces dépenses et sans entrer dans les détails précis de la loi, en voici les points principaux:

(a) Il faut que ces dépenses aient été faites en rapport avec l'exercice d'une charge ou d'un emploi.

(b) Il faut que, d'après les termes de son contrat, l'employé soit obligé de faire ces dépenses lui-même.

(c) Pour déduire des frais de voyage, il faut que l'employé soit tenu ordinairement d'exécuter les fonctions de son emploi ailleurs qu'au lieu d'affaires de son employeur. Les dépenses de voyage encourues par le dentiste pour se rendre de sa résidence à son bureau, ne sont pas déductibles.

Revenu d'une société professionnelle

5. Des dépenses encourues par un associé et non chargées à la société peuvent être déduites du revenu de l'associé. Toutefois, il faut que l'associé puisse établir clairement ces dépenses, montrer pourquoi elles n'ont pas été chargées à la société et prouver qu'elles étaient nécessaires aux revenus de la société.

Commentaires sur le nombre des étudiants en chirurgie dentaire.

Le tableau no 1 montre que le nombre des étudiants des facultés dentaires canadiennes a augmenté depuis l'année dernière. Le nombre total a augmenté de seize. Le nombre maximum que peuvent recevoir les écoles dentaires de notre pays est 820. Mais à cause des échecs et d'autres motifs, ce chiffre est approximatif. Chaque faculté accepte le maximum fixé en première année, mais le nombre des élèves diminue au cours des autres années. Le nombre des inscriptions est le plus élevé cette année depuis 1950-51.

En 1956, le nombre des diplômés a été le plus bas depuis 1948. Sept pour cent des nouveaux dentistes était des femmes et ce pourcentage est le plus élevé jamais constaté depuis qu'on en compile des statistiques. Trente-neuf étudiants canadiens suivent actuellement leur cours dans les écoles américaines. Il y a quarante-deux américains aux études dans les facultés dentaires canadiennes.

En constatant le nombre des étudiants actuels, on peut prédire une légère augmentation de diplômés pour les années prochaines, Cependant, il n'y aura pas d'augmentation substantielle tant que les facultés ne disposeront pas de disponibilités d'enseignement plus grandes.

TABLEAU I

Inscription globale des étudiants dans les facultés dentaires du Canada au 1er janvier 1957

Université	1ière	2ième	3ième	4ième	hommes	femmes	Total
Dalhousie	12	12	12	11	45	2	47
McGill	34	36	35	32	135	2	137
Montréal	52	44	52	36	184	0	184
Toronto	78	75	74	78	290	15	305
Alberta	30	25	29	28	111	1	112
Totaux	206	192	202	185	765	20	785

TABLEAU II

Nombre maximum d'étudiants pouvant être acceptés en 1ière année dans les différentes facultés

Dalhousie	12
McGill	38
Montréal	60
Toronto	65
Alberta	30
Total	205

TABLEAU III

Résumé d'inscriptions dans les facultés dentaires du Canada de 1940-1956 (inclusivement)

Faculté	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
1940-41	31	58	104	210	51	454
1941-42	25	61	118	232	49	485
1942-43	25	67	139	270	53	554
1943-44	22	67	154	255	24	522
1944-45	28	51	162	264	34	539
1945-56	27	73	184	180	54	518
1946-47	38	111	188	340	108	785
1947-48	37	127	208	435	115	922
1948-49	41	146	224	478	123	1012
1949-50	48	147	225	478	136	1034
1950-51	48	145	196	380	114	883
1951-52	49	145	140	300	121	755
1952-53	50	141	111	294	123	719
1953-54	50	142	98	299	118	707
1954-55	48	138	130	318	119	748
1955-56	47	136	161	310	115	769
1956-57	47	137	184	305	112	785

TABLEAU IV

Nombre total des diplômés durant les années 1940-1956 (inclusivement)

Faculté	Dalhousie	McGill	Montréal	Toronto	Alberta	Total
1940	12	13	23	56	13	117
1941	7	18	14	45	13	97
1942	8	9	31	40	32	120
1943	11	26	18	103	8	166
1944	6	12	37	61	24	140
1945	8	13	30	58	7	116
1946	0	5	41	56	0	102
1947	10	18	36	75	10	149
1948	9	15	38	24	13	99
1949	6	34	45	75	20	180
1950	11	36	42	168	49	306
1951	12	37	69	152	25	295
1952	12	36	55	85	27	215
1953	14	34	20	75	35	178
1954	14	37	20	69	32	172
1955	13	35	19	78	29	174
1956	13	33	20	76	26	168

Pour l'annee 1956	**hommes**	**femmes**
Dalhousie	12	1
McGill	32	1
Montréal	20	0
Toronto	66	10
Alberta	26	0
Totaux	156	12

TABLEAU V

Distribution des étudiants par provinces et pays étrangers dans les facultés dentaires du Canada au 1er janvier 1957

Faculté	Terre-Neuve	Ile-du-Prince-Edouard	Nouvelle-Ecosse	Nouveau-Brunswick	Québec	Ontario	Manitoba	Saskatchewan	Alberta	Colombie-Britannique	Etats-Unis	Indes Occidentales	Bermudes	Hong Kong	Europe	Australie	Grande-Bretagne	Totaux
Dalhousie	9	5	16	10		2				1	2	1					1	47
McGill	3		1	2	58	16	3	2	1	8	35	4	3	1				137
Montréal		2		6	167	4	1	2			2							184
Toronto	1	1		1		275	14	9		2						2		305
Alberta							8	22	50	26	3				3			112
Totaux	13	8	17	19	225	297	26	35	51	37	42	5	3	1	3	2	1	785

TABLEAU VI

Etudiants supplémentaires

	Dalhousie	McGill	Montréal	Toronto	Alberta	Totaux
*Etudiants diplômés 1956-57	0	0	0	7	0	7
**Etudiants post-scolaires 1956-57	0	0	13	6	5	24
***Etudiants passagers 1956-57	0	0	0	40	0	40
Hygiénistes aux études durant 1956-57	0	0	0	22	0	22

*L'expression "étudiants diplômés" signifie les dentistes inscrits à l'Université, dans l'Ecole pour diplômés, et qui suivent un cours, qui donne droit à un titre.

**L'expression "étudiants post-scolaires" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours, qui donne droit à un titre ou à un diplôme.

***L'expression "étudiants passagers" signifie les dentistes inscrits dans une faculté dentaire pour y suivre un cours de courte ou longue durée, ne donnant pas droit à un titre ou à un diplôme.

TABLEAU VII

Statistiques au sujet du nombre des étudiants canadiens aux études dans les facultés dentaires du Canada en rapport avec la population de leur province d'origine.

Etudiants venant de	Pourcentage des étudiants	*Proportion des étudiants en rapport avec la population
Terre-Neuve	1.66	1/31,929
Ile-du-Prince-Edouard	1.02	1/12,411
Nouvelle-Ecosse	2.17	1/40,866
Nouveau-Brunswick	2. 41	1/29,190
Québec	28.66	1/20,571
Ontario	37.83	1/18,198
Manitoba	3.31	1/32,694
Saskatchewan	4.46	1/25,162
Alberta	6.50	1/22,022
Colombie-Britannique	4.71	1/37,796
Canada		1/20,485

*Les chiffres des populations sont ceux fournis par le Bureau des Statistiques d'Ottawa pour le 1er juin 1956.

Note: D'après des renseignements fournis par l'Association dentaire américaine, il y a 39 étudiants canadiens inscrits dans des facultés dentaires américaines pour l'année 1956-1957. Comme on ne connait pas leur province d'origine, on ne peut en tenir compte dans les pourcentages en rapport avec la population.

Volume 23
Number 4
Toronto
April 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

Symposium

Dental Needs—Dental Resources—

Dental Health Teaching Practices

On February 21st 1957, Toronto's first Workshop Conference on "Dental Problems of School Children in Toronto" was held in the Royal York Hotel. This conference was sponsored by the Academy of Dentistry and was under the General-chairmanship of the Director of Dental Services of the Department of Public Health of the City. Dr. L. A. Pequegnat, Medical Officer of Health of Toronto was the keynote speaker and his address was followed by the opening remarks of the general chairman. The pages which follow contain these papers, the Reports of the Conference and the addresses of the three consultants presented in the evening to the meeting of the Academy of Dentistry.

EDITOR

The Dental Health Problem

L. A. PEQUEGNAT, M.D., D.P.H., Toronto*

It is an honour and a pleasure to be here. Moreover, this is rather a unique situation in which to find oneself—the position of keynote speaker.

Seemingly I am to strike the note for the day's deliberations, the deliberations which, it is presumed, will reveal facts that will provoke answer to many of our problems by workable means. At least this is the sincere hope of this workshop.

The Academy of Dentistry is to be commended — and the Department of Public Health which I represent may be permitted some credit — for the splendid idea which gave birth to this event. The workshop, as you know, envisages the values of a project which would presume to study and deliberate upon the dental needs of the community, its dental resources and the techniques to be employed or developed in furtherance of an effective equation of these factors. The shortcomings, more easily discernible than else, and the goals to be struck for, should be brought into closer focus. The total community problem is of such magnitude that the attention of one day may well be confined to the dimensions of a particular age group. The age group selected for more reasons than one is the school age, and, as announced, the study will limit itself to the problems of this segment within the area municipality of Toronto only.

School age represents an early age and most good things in our category — in the area of public health I mean specifically — are best started at an early stage. One might presume that the preschool age qualifies as well. That it does in a sense and this group, one may hope, may be the subject or one of the subjects of a future workshop. For the time being we desire to hold emphasis on work which has a traditional background by way of assiduous and long effort. It is here that we can take best stock of our methods and their developed resources and get some notion of the factors which are holding us from further goals. The contiguous age areas, up or down, can be no more than mirrored without discussion at this time. The selection of the day's work, in a word, is perfectly logical.

Preventive dentistry is a part of public health and makes its full contribution to the improved physical and mental health of the nation. If one is tempted to ask where dental health fits into the pattern of communal effort and outlay, one may as well ask the same of health in its more general sense. From time immemorial, one might say, medical and dental health have been grouped in the public health statutes relating to school health services. They are virtually inseparable, in my opinion yield to the same techniques of detection, referral and follow-up. Both are related to child health and comfort as part of the school economy. They are the bulwark of preparation for adult health. At the school level they both convey responsibility to the parent and eventually to the pupil as a self-exercising individual; they both carry over into the generation which will follow. They both entail

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tremendous teaching and demonstration effort, if one would get good measure of return in terms of correction, prevention and carryover. They both pose the need for provision of adequate facilities *somewhere* for the correction of discovered abnormality.

Some words might now be offered in respect of the dental health programme of the Department of Public Health of the City of Toronto. It is an old programme dating back to the middle of the second decade of the century. It has never been a lame programme and from its inception commanded a respectable portion of the total health budget, thanks to the enthusiasm, belief and courage of the Medical Officer of the time. Likewise there never has been doubt of the value of dental health in the official circles of Toronto and I can say there is none now. The budget for 1956 was approximately $225,000, just under 10% of the total of the Department's appropriations. There are on the staff at this time 82 persons, just under 15% of present-day total staff, comprising one director, who is your Chairman, 3 clerks, 7 full-time dental officers, 29 part-time dental officers 1 full-time orthodontist, 1 full-time orthodontic technician, 1 full-time dental hygienist, 1 full-time dental x-ray technician, 8 full-time dental assistants and 30 part-time dental assistants.

Our school dental inspection services provide basically for annual dental inspection of elementary and secondary school children. Survey dentists perform a capable job which is augmented by individual advice as they go along and by giving talks and discussions. There follows a notification to parents of conditions found, coupled with an urge that steps be taken to seek necessary correction and treatment. Emphasis is put on the desirability of treatment by the family dentist, with privilege, in the alternative, to declare inability to do so for financial reason, with a consent, at the discretion of the parent, authorizing necessary attention at the Department's dental clinics. Treatment centres thus become another phase of the

Dr. L. A. Pequegnat, Medical Health Officer of Toronto delivers the Keynote address. Seated is Dr. F. H. Compton, Director of Dental Services, Department of Public Health, Chairman of the Conference.

school dental services, exception to the rule being that in the instance of high or secondary school surveys procedure goes initially through only the first half of the act – referral to family dentist, the use of clinic facility being a deferred consideration available to relatively few. From the cards seeking treatment at the school clinics, an appointment system picks up and children, with some regard for priorities, are referred to the operative clinics on a scheduled basis. The same general rule applies to extractions at a much smaller number of clinics specifically set aside for the purpose and located, as are most of the operative clinics, in the schools.

Clerical work is carried out by the dental assistants, those in attendance on the survey dentists and those who assist at the clinics where the work is done. The same assistants during the active time of contact with the pupils or students utilize their talents in relevant teaching in oral hygiene. This effective teaching effort at the special attention level of the occasion is, of course, part only of the dental health teaching programme which finds its complements in the more formal didactic courses which are part of the school's health curriculum, in the informal daily contacts between teacher and/or nurse and child, in the home visits of the public health nurses, at special gatherings, through the varied channels of publicity,

and so on. The total dental health teaching programme will be found to be large if fully appraised.

As we look at this sizeable programme, one might hear the question: What are we worrying about? The question is, of course, altogether too casual a one. We *are* concerned in that we want to do better with the tools at hand; we, in fact, want new tools. We who are close to the work see the gaps and inadequacies; we see backlog in which failure to cope adequately therewith spells repetition, multiplication and complication. The economy of effort, in a word, goes under challenge.

If we look over past effort comparatively, we note improvement in one sense but not to the extent of approach to the optimal. In 1953 I drew attention at a Breakfast Meeting of the Dental Public Health Section of the Ontario Dental Association to the fact that in 1952 we had surveyed 60,000 of the 95,000 elementary and high school pupils of the city, ⅔ of the elementary and ½ of the high. Half of the former and ⅔ of the latter were found with dental defect; orthodontic deviation averaged 12% and 41% respectively. In more recent years, as result of step-up in our methods, coupled with a less time-consuming type of recording and notification, we have been able to improve the position. In 1955, for example, records reveal that we got closer to complete survey, being able to examine the dentition of approximately 90% of our school population. In all categories 60% or more were found with notifiable defects — caries in the main, other conditions not excluded, of course. The disturbing element, cumulative as it is, is that we are only able to complete the necessary dental caries treatment for about 15,000 to 16,000 per year—a figure remaining comparable with those of the years on which I reported at the meeting in 1952. The case is staggering in the light of what was offered a moment ago in respect of the consequence of backlog. If 60,000 children have demonstrable defect, a corps of dentists four times the present operating staff could be employed for a time if one could presume or dare to obtain such staff. In somewhat altered perspective it has been said that 100 dentists could be used for one year to bury the backlog and put us on a maintenance level.

This is by no means the whole story. Let us listen to something more. What I am about to say may seem to be taking us off course a bit, but it will be quickly sensed that this is not the case. While Canadians spend more than $70 million annually for dental care, only 35% of the population receive any kind of dental care in any one year. Let us think next of the tragic experience of the 65% who get no care in a specified year, if much at any time. Let us now presume a change of heart or a change of economic status on the part of large numbers and now assess the ability of the profession to care for the same. In the past 30 years the population of Canada has risen by 5 million and yet we have only the same schools we had in 1927. Furthermore, over half of Ontario's dentists—to get nearer home—are 50 years of age or older. Loss to the profession through retirement and death will exceed replacement by young graduates until our new dental building in Toronto is erected and is functioning, and until, I add, other schools come into being. In such a circumstance what hope is there of adding rationally to public staff at the local level; what hope is there that the practising profession either will or has the privilege to turn in any high degree from wonted pursuit to the lower-age channels which in the long run will pay off in dividends? Yes, we are a long way from a desired goal and the solution is by no means close at hand.

These are most challenging considerations and seemingly only a few ingenious moves can or could be made with any despatch to hold the line we have or to improve position with present resources as these may be rendered more productive of return. One of these naturally is to move

into the preschool period, as we have in limited pilot fashion in this city, with a view to early attention to a minimal load with its anticipated corollary, the establishment of good oral hygiene and of the practice of giving attention to dental abnormality, regularly and thus before it becomes massive or cumulative. Maintenance at all times is the cheaper and less time-consuming procedure.

There is yet another field more or less wide open, namely, the one of dental research, the effort which would presume to get to the deeper grass roots of dental defect about which not too much is known with exactitude. It is disturbing to note that less than 0.25% of our national expenditure for dental care is turned into research. The Canadian Dental Association appropriated $18,000 to train dental research workers in 1947. In Ontario, dentists from their own funds contributed $142,000, industry $103,000 for use in dental research at the University of Toronto. These may look like substantial amounts but will go short distance in this class of work. Every stimulation should be given donors and benefactors to vote more magnificent sums to a cause which beckons and needs full exploration. Research as we know is the backbone of the advancing sciences and is becoming more and more so in respect of practice.

And now I come to a pet theme. Why not fluoridation of the public water supplies? Here we have a ready instrument, perfectly safe and scientifically proven, which will remove 60% or more of our dental 'headache', which if applied at the younger age will remove a comparable amount of our problem with the young, which in the absolute will carry over appreciably into the older age brackets and give our short-supply resources larger scope and more time to attend to our remaining problems as such may be further ameliorated by prepayment dental plans or by other device for the more equitable distribution of the dental art, in both its preventive and therapeutic aspects.

That is my message. It will be admitted that at no time during the past few minutes have I ventured appreciably off course. The outcome of moves into contiguous territory can have one effect only, that of reducing school load and of rendering present resources at that level more effective. Many of you are to be part of a task force with a day's work ahead in assessing needs of school age children, the resources at hand, the optimal use of the resources, the techniques and distribution of the same as now in existence or potentially capable of stepping-up and improvement. You will have the presence of consultants who, in addition to their contribution at the study sessions, will favour us this evening with a report on deliberations and an evaluation of the day's work.

In conclusion let me note that I have not made reference to the limited orthodontic service of the local department, a truly preventive effort carried on in a small way by the aid of federal health grants. The implications of this phase of work are reasonably well known. Similarly I have omitted earlier mention of the supplementary dental services carried on at college, hospital and public or private agency levels affecting in considerable amount the school problem under review. The presence of these and their worth are acknowledged with gratitude for the part they play in the total programme. These elements will not escape deliberation in the study sessions of the hours ahead.

So—more power to those about to go to work!

These are invigorating days in science and its applications. And if we can only avoid the disaster of another world war, I am convinced that we are on the threshold of great things, full of hope for a better future and a more healthy, happy race of men.

Vannevar Bush, D.Eng., Sc.D.

Social Trends in Relation to Community Dental Health

F. H. COMPTON, D.D.S., D.D.P.H., Toronto, Ont.*

Since its incorporation as a city in the year 1834, Toronto, capital of the Province of Ontario, has grown into a bustling sprawling metropolis of nearly 650,000 inhabitants, the core of a metropolitan area whose population exceeds 1,300,000. Toronto is also Canada's foremost industrial and commercial centre for within a radius of a hundred miles of the city is concentrated one third of the nation's buying power. Much of this development can be traced back through the last thirty or forty years, and Toronto, like any other community which undergoes such rapid and intensive transformation, inevitably has had to contend with various and frequently perplexing problems in its progress along the path from humble origin to mature stature.

The most prominent characteristic of rapid expansion and development of this kind is the phenomenal growth in population. During 122 years since incorporation, there has been a 145-fold increase of population in the metropolitan area. Though partly attributable to natural increase, much of this growth has been brought about through the influx of newcomers to the area from points outside. In Toronto, a most striking feature in recent years has been the exodus of young families to dormitory suburbs and their replacement in the city proper by new arrivals, particularly immigrants from abroad, who understandably gravitate to a metropolis with its employment potential and the added opportunities for joining into more or less cohesive neighbourhood groups, composed of residents with common cultural and ethnic interests.

Population upheaval anywhere brings in its train social problems. When language and cultural barriers are superimposed, these problems are compounded, and their solution by traditional methods becomes well nigh impossible. The factors which mould a community obviously influence every aspect of its health and welfare. Certain phases governed by mandatory regulation, such as communicable disease prevention, food control and environmental hygiene, are indeed less susceptible than others which are the product of public demand and consent. The fundamental basis for activities in this category, which include dental health services from all sources, centres upon discovery of people's needs and pointing to resources within the community. This is accomplished by teaching and demonstration, twin tools which in our society are entirely dependent upon voluntary cooperation. Dental health activities are consequently highly vulnerable to the influences which have recently predominated in Toronto, and one may postulate that dental conditions in this area constitute a visible manifestation of the current social climate.

At the same time, the past decade has

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been marked by unprecedented advances in every aspect of dental health. Water fluoridation, topical fluoride therapy, the introduction of dental hygienists in Canada, projected expansions in dental training and research facilities, continuing study of the economics of dental care services, and, above all, the shift in emphasis from preoccupation with restoration, removal and replacement of teeth to preventive service designed to maintain lifelong integrity of the mouth, all warrant the conclusion that a turning point has been reached.

Standing upon the threshold of a new era, these products of scientific progress must be related to the changing social scene if we are to map an intelligent course for the future. That point had been reached last year when a decision was made to convene a citizens' conference on dental health in Toronto. The Workshop Conference was found to be the most successful medium for this purpose. It affords opportunity for those who contribute and for those who benefit from dental health services to examine matters of common interest. More specifically, it permits the practising dentist, the public health department, the voluntary agency and the school authority to define, to their mutual satisfaction and understanding, the scope of their contributions. It also permits the public which benefits in a consumer capacity to discover the extent and the limitations of the community's resources.

Such a conference was convened on February 21, 1957 under sponsorship of the Toronto Academy of Dentistry in association with the city's Department of Public Health. Sixty professional and civic leaders representing the broad fields of health, education and welfare, met to examine the social, economic and clinical aspects of dental health among Toronto's school children. They did this in terms of current needs, resources and health teaching practices. Their recommendations and conclusions appear in the report that follows.

The conference was not merely an elaborate stocktaking device or inventory at a vital juncture in the development of community dental health. Its significance lay in the fact that for the first time in a Canadian metropolis lay leaders, whose contact with dentistry is otherwise generally restricted to experience in a dental office, met with the profession in an effort to contribute their respective skills and resources for the benefit of all. Because of this spirit, because of the potentially far-reaching effects of its recommendations, this conference holds promise for the future progress of dental health in Toronto.

As to the Nation's unmet dental needs, the best available evidence suggests that despite the universal occurrence of dental disorders, less than one-third of the population receives anything approaching adequate dental care each year. Although more than $1 billion was spent for this care by Americans in 1952, it remains true that many millions of our citizens are either receiving no care or, at best, very limited services.

The opportunity to secure dental care for all, however, cannot be realized immediately. Good sense suggests that we place greater reliance upon local initiative and interest. Aggressive support and participation by the community are essential ingredients.

Nelson A. Rockefeller

Report of a Workshop Conference on Dental Problems of School Children in Toronto

The Council of the Academy of Dentistry on December 1, 1955 decided to seek the assistance of other community agencies in organizing a city-wide conference to determine the dental needs of city school children. The purpose of this conference was to improve knowledge and understanding of the extent and character of dental health problems affecting school children in Toronto and thus permit effective mobilization of total community resources for an aggressive attack upon these problems. The resources, facilities and methods which may be employed to meet these needs were to be reviewed and recommendations made for suitable means whereby dental health teaching practices might be improved.

The Director of Dental Services of the Department of Public Health was invited to assume the responsibility of organizing this conference. The Board of Education, the Metropolitan Separate School Board, the Toronto Home and School Council, the Archdiocesan Council of Parent-Teacher Associations, the Welfare Council of Toronto and District, the Academy of Dentistry and the Department of Public Health each appointed representatives to form a Planning Committee of nine to arrange a Workshop Conference on February 21, 1957. The members of this committee nominated 47 delegates from their sponsoring agencies, or from related agencies, who *participated* in the conference sessions. In addition, a number of *observers* from the Ontario Department of Health, the Toronto Local Board of Health, the University of Toronto, the Ontario Dental Association and the Toronto Teachers' College were also present at the conference sessions. Subsequently, subcommittees were designated to arrange the program for the Workshop Conference, to evaluate the proceedings, and to prepare reports and publicity. Three prominent authorities reflecting advanced thinking on this continent in regard to community dental health and educational psychology acted as consultants to the conference.

Discussion was limited, under the terms of reference, to school children within the corporate limits of the City of Toronto. The participants were divided into three groups to consider the three aspects of the subject: (1) Dental needs, (2) dental resources, and (3) dental health teaching practices. Each group was led by a group leader, provided with a recorder and assigned a consultant.

Dental Needs

Group A considered the characteristics of dental and oral diseases, the prevalence and cumulative nature of dental caries defects, the role of the deciduous teeth and dental caries as a predisposing cause of malocclusion problems (irregularities of the teeth and jaws) and of periodontal disease (affecting the gums and supporting tissues). Preventive measures embracing oral hygiene, nutrition, fluoridation, topical fluoride application, "incremental" dental treatment and space-maintenance were reviewed.

Consideration was given to the total number of children in public, separate and secondary schools, and to the role of the family dentist, the public dental clinic and to the capacity of existing clinical facilities. Current attitudes toward the

dental health of school children were examined, and the viewpoints of parent, of school administrative and academic staffs, of the practising dentist, of the public health dentist and of the public health nurse were elicited. Reference was made to the language problems of New Canadians. Consideration was also given to the needs of special groups such as mentally retarded and physically handicapped children.

GROUP A.

The participants agreed that too little is known by the public concerning the extent and gravity of dental health problems. Dental health is considered an integral part of total health, and consequently, a definite need was expressed for closer cooperation between all agencies concerned with community health if dental health problems are to be dealt with satisfactorily.

Concern was felt over widespread indifference regarding the primary dentition. This appeared to stem from a lack of public awareness of the significance of the primary teeth. The view was expressed that unless all measures are promptly taken to make parents, guardians and others concerned with the welfare of children aware of the serious consequences of neglected tooth decay and premature loss of primary teeth, there can be little improvement in dental health. Apart from the obvious complications of pain, risk of spreading infection, and interference with normal functions such as speech, breathing and mastication, it was emphasized that premature loss of primary teeth constitutes a potent cause of malocclusion and that it can detrimentally affect jaw development and facial expression to a marked degree.

All agencies were strongly urged to educate the public in general, and young parents in particular to the great need for early and continuing dental care for all children. It was further recommended that expectant mothers be instructed at prenatal clinics and classes or by their attending physicians concerning the importance of diet and nutrition in tooth formation. Personal responsibility for the dental health of their children as well as for themselves must be clearly brought home at this time. The participants felt that this might be reinforced by having suitably trained teachers impress upon secondary school students, as part of their training for parenthood, the vital importance of adequate dental health supervision during infancy and early childhood.

It was agreed that effort should be made early in the child's life to prevent him from acquiring fear of dental treatment, and that parents be urged to take their young children with them when they themselves visit a dentist. It was felt that dentists who do not accept child patients might refer parents to others who do.

It was recognized that considerable expansion of dental care facilities would be required in order to satisfy total treatment demand arising from the accumulated backlog of dental needs of 95,000 school children. The practicability of such a move is governed by the availability of dental manpower in the Toronto area—a relatively fixed asset.

While this group appreciated the wisdom of priority provision for preschool and young school children, with particular reference to the Riverdale Preschool Dental Project, a need to seek some additional facilities to meet the dental care requirements of senior elementary school children was expressed. It was also recommended that further study be given to the special needs of mentally retarded and physically handicapped children.

It was the group's unanimous opinion that the present widespread prevalence

GROUP B.

of dental disease is largely a result of neglect and much of the neglect is caused by ignorance. It was therefore urged that both adults and children be made aware of their personal responsibility for putting into effect those measures which can be practised by the individual to maintain dental and oral health.

The need for educating all sections of the community in the effective use of preventive measures which require community action was also stressed.

This group drew particular attention to the scarcity of existing funds available for dental research purposes and strongly recommended that increased allocations from governmental sources be made available for the continuance and augmentation of dental research activities.

Dental Facilities and Resources

Group B considered the number and relative distribution of private dental practitioners in the Toronto area. Participants reviewed the responsibilities and policies of the Department of Public Health with special reference to its clinical program for underprivileged school children below Grade 5 level. Consideration was also given to clinical facilities for underprivileged senior elementary and secondary school students, as well as to such special facilities as the Space Maintenance and Orthodontic Departments.

The group discussed the contributions of the University of Toronto Dental Infirmary and examined the dental services provided in general hospitals and at the Hospital for Sick Children. Consideration was given to the facilities and policies of the Children's Aid Society Dental Clinic, to the Junior Red Cross Clinic for preschool children in day nurseries, to the New Mount Sinai Hospital orthodontic program and to the orthodontic assistance program of the Toronto Chapter, Ontario Dental Nurses' and Assistants' Association.

The participants established that the metropolitan area is served by approximately 750 dental practitioners yielding a dentist population ratio of approximately 1:1,500. Although this constitutes one of the most favourable dental manpower ratios in Canada, concern was expressed at a steady increase in the proportion of older practitioners with the prospect of continuing loss from the total professional manpower pool by reversions to part-time practice, retirements and deaths. Coupled with the time interval that must elapse before additional dental training facilities become available, this feature was considered a basic limiting factor in the distribution of dental care services.

The group endorsed the "incremental" dental care program provided by the Department of Public Health to indigent or underprivileged preschool and school children up to Grade 5 level. It was felt however that any attempt to extend this service without additional personnel and facilities would seriously endanger this program.

Because of the need for providing additional facilities to meet dental treatment requirements, it was recommended that the public hospitals be encouraged to continue and expand the personnel and physical accommodation of their dental departments.

The Children's Aid Society, the Junior Red Cross, the Hospital for Sick Children, the New Mt. Sinai Hospital, the Faculty of Dentistry and the Ontario Dental Nurses' and Assistants' Association were commended for their respective contributions to the dental care resources available to city school children.

The participants recommended that private practitioner resources be fully exploited in the most productive manner by

urging parents to place their children under supervision of the family dentist wherever possible, commencing between the two and three year age level. It was further suggested that the Academy of Dentistry urge dental practitioners to encourage parents, obtaining dental care for themselves, to bring their preschool and school children to dental offices for examination and treatment, if necessary.

GROUP C.

Dental Health Teaching Practices

Group C examined the content of accepted dental health teaching, giving consideration to basic principles with which parents, teachers, nurses, welfare workers and other health workers should be cognizant.

The participants examined the role of each agency in regard to dental health education and discussed the sources from which authentic resource materials and technical information might be obtained. Critical appraisal of presently available dental health teaching aids revealed the necessity for developing this material from the basis of health needs and interests as related to grade level and age. It was suggested that a study of such needs and interests be made in Toronto.

Some concern was expressed at an apparent lack of coordination between federal and provincial production sources of health teaching material. It was felt that unnecessary duplication or inadequate coverage resulted from this situation, and further, that considerable confusion exists among teachers and interested community groups as to the source from which they might obtain these materials.

The role of the Academy of Dentistry as a sponsor of in-service training programs or workshops for teachers' preparation in dental health education was the subject of a specific recommendation. More effective use of radio and television at the national and provincial levels was urged to foster adult awareness of dental health needs.

In considering cooperation between the home and the school regarding dental education of the child, his dental needs and the utilization of community dental resources, this group emphatically recommended eliminating the serving of sweetened foods and beverages on school premises. Referring to cooperation between the practising dentist and the school, specific recommendations were made relative to school excuse cards and the coordination of released-time dental appointments with classwork. The educational value to the child of a dental appointment was stressed.

Recommendations

The plenary session advanced the following recommendations and resolutions as specific ways of implementing the suggestions of the three groups:

General

That a Council on Dental Health be established, to be comprised of representatives from the groups which formed the Workshop Planning Committee, namely:

1. The Toronto Board of Education.
2. The Metropolitan Separate School Board.
3. The Toronto Home and School Council.
4. The Archdiocesan Council of Parent-Teacher Associations.
5. The Toronto Department of Public Health.
6. The Academy of Dentistry, Toronto.
7. The Toronto Welfare Council and related social agencies.

and further:

That the Head of the Department of Dental Public Health, University of Toronto be invited to head this council, and

That the council take requisite measures to bring to the attention of appropriate agencies the recommendations arising out of the Workshop Conference.

Group A—Dental Needs

1. That all community agencies cooperate in informing all parents and persons responsible for the welfare of children that the dental health of the preschool and young school child DOES determine his dental health as an adult; and
   that all available preventive and treatment measures be instituted to this end during early childhood.

2. That dentists, teachers and welfare workers make every effort to make individuals conscious of their personal responsibility in the prevention of dental and oral diseases; and
   that this phase of dental health education be particularly emphasized with the adolescent group, special consideration being given to pupils planning to leave school before Grade 13.

3. That all agencies represented at this conference stress, in their contact with the public, the vital importance of properly caring for the primary or foundation teeth of young school children.

4. That programs of information concerning dental health needs of school children be prepared for interested adult groups, such as nurses, teachers, social workers, Parent-Teacher and Home and School groups.

5. That additional dental facilities be sought to care for under-privileged or indigent children in senior elementary grades.

6. That all sections of the community be educated in the wise, effective use of those preventive dental health measures which require community action.

7. That the public be made aware of the fact that one of the major areas of effort in dealing with the serious problem of dental disease must be in the realm of research. Public funds presently available for use in dental research are most inadequate; therefore due cognizance must be taken of this need, and funds from governmental sources should be made available to ensure a continuance and augmentation of dental research activities; and
   That further financial support be encouraged from public and private resources to supplement those already available.

8. That a survey be made to ascertain the dental needs of mentally retarded and physically handicapped children who are not presently being cared for.

9. That positive measures be taken at the time of kindergarten registration in the Spring, and at the time when insurance forms are forwarded to parents in the Fall, to emphasize the dental coverage contained in school accident insurance policies.

10. That facilities for training in the dental profession be considerably increased; and
    That every encouragement be given to young people to enter the dental profession; and
    That interested and suitably qualified young women be encouraged to train as dental hygienists.

Group B—Dental Facilities and Resources

11. That this conference endorses the incremental dental care program provided by the Department of Public Health to indigent or underprivileged preschool and school children up to Grade 5 level.

12. Since the primary responsibility for health rests with the individual in a free society, that parents should be encouraged to have their children placed under supervision of the family

dentist wherever possible, between and 2 and 3 year age level.

13. That the Academy of Dentistry urge dental practitioners to encourage parents, obtaining dental care for themselves, to bring their preschool and school children to dental offices for examination and treatment, if necessary.

14. Because of the necessity for providing more clinical facilities for dental treatment requirements, it is urged that public hospitals be encouraged to continue and extend present personnel and physical accommodation.

Group C—Dental Health Teaching Practices

15. In order to reinforce and support dental health teaching in the school and in the home, it is urged that compatibility regarding content and practices be observed by all who contribute to dental health education.

16. That teachers be alerted to various forth-coming activities such as the annual school dental inspection in order that profitable use may be made of the situation for teaching, interpretation and assistance in achieving better follow-up results.

17. That in determining the factors of motivation for the improvement of dental health teaching, the approach be made from the basis of health needs and interests as related to grade level and age; and
That a study of such needs and interests be made in this community.*

18. That the continued use of the "Health and Personal Development" series of health readers is approved by this conference, and that all teachers using the series be made cognizant of the availability and value of these manuals.

19. That agencies taking responsibility for producing dental health teaching material give careful consideration to the scientific authenticity of its contents.

20. In order to improve the quality, availability and circulation of health teaching materials, it is recommended:
That the appropriate federal and provincial authorities be requested to consult with local authorities as to specific needs, and
That they coordinate the production of these materials to avoid unnecessary duplication, and further
That ambiguity as to source from which materials may be obtained by teachers and interested community groups be eliminated from the material.

21. That the attention of interested individuals, organizations and clubs be directed to the services of the local branch of the Canadian Film Institute which are available to all citizens in Canada.*

22. That in order to encourage the dissemination of dental health information among adult groups, more effective use be made of radio and television at the national and provincial levels.

23. That organizations such as Home and School and Parent-Teacher Associations be urged to stimulate dental health education by:
    (a) Making increased use of Home and School and Parent-Teacher Association bulletins for dissemination of dental health information,
    (b) Inviting speakers on dental health more frequently, and
    (c) Informing social agencies of the time and place of their meetings, so that social workers may be enabled to attend.

24. This conference emphatically recommends that the Toronto Home and School Council and the Toronto Archdiocesan Council of Parent-Teacher Associations request their local constituent associations to discourage the

*Denver Public Schools: The Health Interests of Children, 1946-47. Charles E. Greene, Superintendent of Schools.

*Annual fees for group membership are $10.00; for individual membership $2.00. This entitles the members to a reduced rental fee for films and projectors, for opportunity to review films, assistance in selection, and instruction in operating projectors.

DISCUSSION LEADERS

Seated l. to r. Dr. Muriel Uprichard, Consultant; Rev. Sr. M. Dolorosa, Leader Group A; Miss M. Smillie, Recorder, Group C; Mrs. P. Brooks, Recorder, Group B; Mrs. H. A. Denoon, Recorder, Group A.

Standing l. to r. Dr. A. L. McKay, Leader, Group B; Dr. Hugh R. McLaren, Consultant; Dr. Frank H. Compton, General-Chairman; Dr. J. M. Wisan, Consultant; Dr. Wesley J. Dunn, Leader, Group C.

All photos courtesy Canadian Pacific Railway

serving on school premises of sweetened foods and beverages, the excessive consumption of which is injurious to dental health and contrary to accepted health teaching, and to encourage in their place the serving of nutritious, low-calorie foods in accordance with Canada Food Rules.

25. This conference recommends that the services of members of the Toronto Academy of Dentistry be made available to assist in the instruction of dental health to Toronto Teachers' College Students, and that the Ontario Department of Education be advised of the availability of this service.
26. That all practising dentists be informed of the existing prenatal classes which are sponsored by the Welfare Council of Toronto and District and that dentists be encouraged to refer patients who are expectant mothers to these classes.
27. In view of the impracticability of school children receiving necessary dental care after school hours only, this conference recommends that the Toronto education authorities accept

the need for dental treatment during school hours. This recommendation is subject to the following reservations:

(a) That the Toronto education authorities accept dental treatment and dental health teachings as an integral part of general health,

(b) That some mutually acceptable means such as a card be devised whereby the time consumed by a dental appointment will be known to the school and to the dentist, thereby minimizing the abuse of this privilege, and

(c) That the Academy of Dentistry solicit the cooperation of dentists in the choosing and keeping of dental appointment times, thereby conflicting as little as possible with school hours. Dentists should be encouraged to utilize these appointments to the best advantage in the teaching of dental health procedures.

28. That this conference wishes to stress the importance of educational programs for preschool and young school children as exemplified by the Department of Public Health "Riverdale Preschool Dental Project". It is therefore recommended:

(a) That representations be made to the provincial and federal authorities to continue this project, and

(b) That if the desired financial support from the above-mentioned authorities is not obtained, the Riverdale Preschool Project be continued on an experimental basis as a regular part of the dental program of the Department of Public Health, and that project personnel be incorporated into the regular civic establishment.

29. That the Board of Education and the Metropolitan Separate School Board be urged to explore the possibility of appointing one or more suitably qualified dental hygienists as consultants to teachers in their dental health instruction program and to assist in in-service training of teachers.

WORKSHOP PLANNING COMMITTEE

GENERAL CHAIRMAN

Dr. F. H. Compton,
Director, Division of Dental Services,
Toronto Department of Public Health.

Representative of the Toronto Board of Education:

Mr. H. E. Cavell,
Assistant Superintendent of Public Schools.

Representative of the Toronto Home and School Council:

Mrs. Kent Barker,
President, Toronto Home and School Council.

Representative of the Toronto Archdiocesan Council of Parent-Teacher Associations:

Mrs. Y. Wallingford.

Representative of the Toronto Department of Public Health:

Dr. A. L. McKay,
Director, Division of Community Health Services.

Representative of the Toronto Metropolitan Separate School Board:

Mr. J. Whelan,
Executive Officer, Toronto Metropolitan Separate School Board.

Representative of the Welfare Council of Toronto and District:

Mrs. L. W. Perry,
Chairman, Committee on Dental Needs and Resources.

Representatives of the Toronto Academy of Dentistry:

Dr. V. A. Herron,
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Miss M. Ferris,
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Miss J. Drope,
Children's Aid Society.

SPECIAL GUESTS AND OBSERVERS

Keynote Speaker

Dr. L. A. Pequegnat,
Medical Officer of Health,
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Ontario Department of Health

Dr. F. A. Kohli,
Director of Dental Services.

Dr. R. M. Grainger,
Dental Statistics and Research Section,
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Toronto Local Board of Health

Dr. J. W. Ross.

University of Toronto and Ontario Dental Association

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Faculty of Dentistry.

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Miss M. V. McIlveen.

The Dental Problems and Needs of School Children

HUGH R. McLAREN, D.D.S., D.D.P.H.,* Ottawa.

The first half of the present century brought the greatest advances in public health to be made during any period of history. Largely due to application of the principles of bacteriology and immunology in the development of measures for control of man's environment, and for the improvement of his resistance to infection, the age-old scourge of acute, infectious, communicable diseases has been all but eliminated. We have witnessed dramatic reductions in untimely deaths, particularly during infancy and childhood. Since 1900, life expectancy at birth has increased from 47 years to about seventy; this is a greater rise, in fifty years, than took place during the previous twenty centuries.

But, with greater survival in the early years of life, and increasing longevity in the general population, chronic degenative and progressively disabling diseases have become the outstanding problems of public health. While, perhaps, they may not be of such immediate hazard to life as were the problems of yesteryear, diseases in this group increasingly menace the health and usefulness to society of larger and larger numbers of our fellow-citizens.

Dental and oral diseases fall into this category. They are by no means new as health problems – on the contrary, they have been known to every generation of mankind of which there exists any record. It is their significance as a public health problem which is new; new, in the sense that we have just begun to learn something of the high cost to the community of oral ill-health, whether that cost is measured in terms of suffering, pain and infection, or in dollars. They constitute the most widespread health problem of civilized man; according to the World Health Organization, dental and oral diseases are even more prevalent than either malaria or the common cold, which were long considered to be the most outstanding human afflictions. In Canada, they are coming to be recognized as our most expensive disease.

Dental disorders have a number of characteristics which mark chronic disease generally. They result, not from a single specific cause, but from a multiplicity of factors; their onset frequently is silent, insidious and – at least in the early stages – free of subjective symptoms; in the absence of timely care, they tend to be progressively destructive of the teeth and associated structures; when they attack once, they confer no immunity to subsequent attack; their cumulative effects are known to increase vulnerability to other diseases. Finally, the manifestations of dental and oral diseases, as well as the sources of ultimate dental disability have their beginnings in childhood and youth.

Dental and oral diseases are unique among chronic disease problems, however, in that they are known to have an almost universal attack-rate, that dental tissues and organs, unlike other parts of the body, have practically no powers of self-repair once injured or diseased, in that dental treatment needs continue to recur, and treatment ordinarily requires the applica-

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tion of biomechanical procedures which tend to be time-consuming, hence relatively costly.

These characteristics are particularly significant to the planning of public dental health programs. When, and only when, the public becomes aware of the magnitude, complexity and extent of the dental health problem and of its enormous impact upon the community, and when public awareness prompts concerted action, utilizing the community's combined resources in an all-out attack on the problem at its sources—then, and only then, shall we be able to look forward to the day when present levels of oral health will improve. To-day's Workshop Conference at which members of the dental profession, the health department, school boards, parent-teacher organizations and of other agencies concerned with the health of this city's school children has been a firm step forward in the planning of the community's attack. To all whose privilege it has been to participate, this has been a day of both stimulation and challenge. It may well prove, also, to have been a day that will prove to have had far-reaching effects on the health of Toronto's citizens of to-morrow.

It was considered that the first step should be to explore and define the problems affecting the dental health of children; that such definition and measurement were basic to the assessment of their dental needs, as well as important to evaluation of the community's resources for meeting those needs. This was the task assigned to Group I, and the present speaker's assignment, to-night is to review some of the Group's findings.

This first, and major dental health problem among children of school age is, of course, dental caries. The dental profession and other workers most intimately concerned with the health of children long have been acutely aware that this disease is the most extensive and most neglected health problem encountered in children. Unfortunately there is all too much evidence that the community at large, up to the present, is unaware of the enormity of the problem, or that many members of the community are either unconvinced that this disease is a significant problem, or unconcerned about the need for prompt action for its control and prevention. In Toronto – as in most communities whose water supplies are deficient in fluoride-content – few children appear to be immune; data obtained by the local health department indicate that ninety of every hundred children attending school experience tooth decay. While three of every four had visited a dentist – this, by the way, represents a higher figure than is the case in most Canadian communities – it was found that 66% of Toronto school children do not receive complete treatment of their dental needs, in this category. Approximately one child in five, when examined, revealed the presence of complete neglect of dental caries needs.

It is apparent that this disease starts very early in the average child's life, frequently occurring shortly after the foundation teeth have errupted. Data concerning the prevalence and incidence of dental caries among pre-school children are scattered and inadequate; the Riverdale Project, however, should provide valuable information on this score. But, at school-entering age, at least seven out of every ten children have carious teeth. The prevalence increases with chronological age, and by the time they reach eleven years and over, more than ninety per cent of Toronto children exhibit dental caries experience. Each year, as age advances, on the order of 1.5 additional decayed teeth, per child, are observed. This situation is further complicated by the fact that each decayed tooth which is neglected undergoes progressive destruction of the enamel and dentin; in other words, as new defects occur those which were observed earlier grow larger and deeper. As Thomas Parran has expressed it, ". . . the problem of dental caries grows like a snowball; like compound interest." The City of Toronto Health Department has estimated that the full-time services of one hundred dentists would be required,

for a period of one year, to eliminate the presently-accrued back-log of dental caries treatment needs, alone, of this city's elementary and secondary school children. And, by the time they have finished their task, at the end of a year, something on the order of 135,000 new cavities would have appeared in the teeth of their patients!

In many respects, the problem of dental caries is basic to all the dental problems of childhood. Prolonged neglect of this disease results in unnecessary pain and infection, and premature tooth-loss. In varying degrees, the physiologic functions of mastication, swallowing, speech, hearing and breathing may become impaired – during what is probably the most critical period in a child's life, as far as growth and development are concerned. Continuing premature loss of teeth in childhood has been recognized to be an important predisposing cause of malocclusion, another dental problem of childhood and adolescence, and a problem of increasing concern. Dental caries, together with teeth in improper alignment, are certainly a contributory cause of the periodontal diseases which beset us in adult life, and which are the major cause of tooth-loss in persons past thirty to thirty-five years of age.

With presently-available resources in terms of dental personnel and dental treatment facilities, it is clear that no possibility exists of bringing the dental problems of children, alone, under control, as long as neglect of dental and oral health forces the major emphasis to be placed upon treatment of the terminal, destructive effects of disease. The dental profession is convinced that there must be a shift in emphasis, that the major effort must be for the prevention and early control of dental disorders. But, in order that this may be accomplished, the active, energetic and sustained co-operation of all members of the community having any concern at all for the health and well-being of the community's children is an urgent necessity.

The prime need is to inform and to educate the public; to convince it that dental health is an individual responsibility, as well as a community problem. Parents should be made firmly aware of the facts that no one can give their children good oral health, and that dental disorders are not – in the ordinary sense – curable; but that they are largely preventable, and that the means are, and long have been, available for helping to develop and maintain healthy teeth and oral conditions, provided intelligent, effective use is made of those means.

One of the reasons that such dramatic success has been achieved against the once-dreaded "crowd killing" epidemics, has been that very little personal, individual effort was required of the average citizen in reducing the hazards to health which, formerly abounded in his environment, or in improving his resistance to infection. It is not so simple, in the case of dental and oral disease; to a considerable degree, as is the case with all chronic, degenerative and disabling disease, success in the efforts to achieve control of the problems of dental health depends, vitally, on his making it his personal business. For the prevention of dental caries and of the other dental disorders is primarily an individual responsibility.

There is a preponderance of evidence, for example, that the immoderate, excessive use of sugars and of sugar-bearing foods is a major factor in the occurrence of tooth decay, and that their restriction will reduce substantially the incidence of tooth decay. It is known that proper and systematic habits and practices of oral hygiene, including the brushing of the teeth immediately after eating also will reduce the occurrence of this disease. But both dietary control and oral hygiene practices are personal affairs; both, to be effective must be invoked by individuals.

Until the recent past no effective means of preventing dental caries on a community-wide basis was available. Demonstration of the fluorine-dental caries relationship, following many, many years of investigation and testing, has changed this.

It is a scientific fact, repeatedly confirmed, that the adjustment of a fluoride-deficient water supply to a concentration of from 1.0 to 1.2 p.p.m. fluoride will reduce the prevalence *and* the incidence of dental caries by about two-thirds, and that the benefits are carried over into adult life. This, over and over again, has been shown to be a judicious, safe and effective public health procedure. Topical fluoride therapy, also, is effective in reducing tooth decay; it is, however, a time-consuming procedure, and considerably more costly than is water fluoridation. It is all too apparent, however, that education of the public as to the value of these procedures still ranks high in the list of dental needs.

No one – certainly in the fields of dental research, practice or public health – has ever claimed that any of these measures will completely prevent dental caries. But they will accomplish much in preventing the accumulation of an enormous back-log of dental caries treatment needs in future generations, such as exists in the generation of children of school and pre-school age, today. The community which chooses to do so has the means at hand, now, to make it possible for its dentists to meet the treatment needs of far more persons than is possible under present circumstances. Again, the pressing need is one of educating the public in the wise and effective use of all presently-available preventive practices and procedures.

Another important need concerns the use of dental treatment facilities, whether private or public. In the treatment of chronic diseases which are not ordinarily curable, and which cannot be completely prevented, it is of the utmost importance that their progression be intercepted at the earliest possible stage. With respect to dental disorders, especially, systematic application of the cardinal principles of early diagnosis and prompt treatment is vital. Early, regular, complete and periodic dental treatment of children's dental needs, on an incremental basis, has been demonstrated to be remarkably effective in preventing the piling-up of a back-log of dental defects. It has been shown, for example, that if children can be brought under the care of a dentist early enough, and if that care is systematically continued at regular intervals, that at least three results occur: the time required, per child, to complete dental care, each year, is reduced by about 60%; the dentist can, consequently, extend his services to a considerably greater number of children; there is a marked reduction in premature tooth loss among children whose needs are met, as they occur.

Many parents, apparently, have been unconcerned about the need for prompt recurrent treatment to prevent, delay the onset or intercept the progression of dental disorders at the earliest possible stage. This has been, still is, especially true of the attitude towards care of the foundation teeth. Traditionally, the extraction of diseased teeth has been considered a solution to the dental health problems of the young. We must strive to change this attitude, again through a factual, sustained program of education. It cannot be emphasized and re-emphasized too strongly, that the teeth are more frequently and more destructively diseased, from early childhood on, than any other part of the body, and that dental and oral diseases contribute both directly and indirectly to the mounting burden of illness in the general population.

So far, we have been concerned chiefly about the problems and needs of children who attend the city's elementary and secondary schools. What about the dental problems and needs of children handicapped by cerebral palsy, epilepsy, congenital heart disease or rheumatic fever, cleft palate and hare lip, etc? Advances in the health sciences have, in recent years, resulted in the survival of many more children with severe handicaps, than was formerly the case. The lack of dental care is becoming a problem of considerable concern in the development of programs for these handicapped children in the community. While it can be assumed that, in general, their dental problems are similar to those of other children, we need to know a great deal more about their

nature, extent and about the complicating factors caused by their handicaps, in meeting their specific needs. The inclusion of dental care in programs for handicapped children will involve specialized research and training on the part of the dental profession.

In summary, the dental problems of school children are complex in nature and of considerable magnitude. They are largely problems because of neglect; neglect caused by ignorance, unconcern, fear and by the inability of some parents to purchase dental care for their children. The presently-existing needs of children of school-age cannot be met, nor their problems controlled as long as the major demand for dental care is in the realm of terminal treatment. Their problems can be reduced in size only through the adoption of all known, scientifically-proven preventive measures, and by the early detection and correction of defects not prevented.

The pressing need is for an effective, factual program of dental health education and public information. Parents, and the community at large must be made aware of the problems that exist, and that they are community problems requiring community action for their control. There is need for continued and intensified research on the causes of dental and oral disease, on the development of more effective preventive measures, and in the field of dental health services. Above all, there is need for concerted action by all members of the community in the planning, development and carrying out of a program for dental health.

The dentists of this city, critically aware of their responsibility to the community, have taken the first step, in sponsoring today's Workshop Conference. They need, and I am sure will receive, the support of Toronto's citizens, in the struggle – not merely to control and prevent the dental and oral disease problems affecting children – but for the maintenance and improvement of dental and oral health. This will take time, and considerable effort. The goal is worth any effort!

Comprehensive Dental Programs

J. M. WISAN, D.D.S., M.S.P.H.,* Philadelphia, Pa.

The closing sentences of two editorials in the January issue of "The Journal of the American Dental Association" guided me in preparing my discussion for this meeting. The editor stated: * * * "Neither education nor fluoridation, singly or combined, will ever completely supplant good dental operative procedures. There will always be a need for paedodontics and for the family dentists who will backstop the dental educator and the water engineer."[1] * * * "Good dentistry will always require the meticulous application of high technical skill and knowledge."[2]

It will be noted that a triad of education, fluoridation and operative dentistry is suggested. The second quotation emphasized the need for high standards of

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performance of dentistry. Obviously the talents of skillful dentists, water engineers and educators are required to improve dental conditions. Consequently, one seems to be justified in concluding that a community can cope with the dental health problems *of the total population* if health, welfare and education agencies participate potently.[3]

I am suggesting broad-scope planning to achieve broad-scope objectives. I shall try to prove the value of comprehensive dental programs, first by citing the futility of fragmentary efforts and second by indicating how one community is aiming to advance dental health of the total population.

Most dental programs conducted by city health departments in the United States are limited to the treatment of children in dental clinics. Philadelphia in 1953 was typical. Clinics had been organized in which dentists filled 9,301 teeth for 8,090 children. There were approximately 500,000 children, ages 6 to 14, of whom it was estimated 20% or 100,000 were from low-income homes. Eight per cent of the underprivileged children in this age group were given some dental treatment. However, only 20% of the fillings needed by these children were inserted. It was noted that, consequently, the number of extracted permanent teeth increased from year to year.[4] Teeth were not being saved. The futility of such a program in terms of oral health improvements is obvious.

How can communities organize dental programs that will improve dental health by emphasizing preventive measures? I am suggesting comprehensive planning to enlist the participation and coordination of various professional and community groups.

Since participation and coordination are enchanting objectives, many communities attempt to achieve them, but fail in their attainment. What may be considered effective participation and coordination for dental health? This question is particularly significant because this afternoon's work conference recommends the organization of a Toronto Council on Dental Public Health.

Coordination Defined

Effective coordination for dental health may be defined as, "The joint action of the dental profession and other community agencies in developing and implementing policies and procedures for dental programs and in stimulating citizen participation to interpret the program and to obtain public support through democratic processes".

Such joint action will actuate the following:

1. Collecting information of existing dental facilities
2. Estimating dental needs
3. Exploring methods of meeting dental needs
4. Influencing authorities to initiate adequate dental programs
5. Developing and implementing desirable policies and procedures
6. Evaluating results of dental programs *routinely*
7. Guiding redirection of programs
8. Conducting widespread dental health education programs
9. Sustaining public support on a continuing basis
10. Obtaining increased budgetary allocations for dental programs
11. Maintaining high standards of treatment
12. Minimizing undesirable political practices
13. Enhancing medico-dental relationships
14. Increasing use of all dental facilities

Members of this afternoon's work conference presented a number of resolutions, most of which can be included in the fourteen objectives I have mentioned as possible attainments by joint community action.

Achieving Coordination

Achieving community coordination requires a combination of art and science, since we are dealing with individual and group interests of people. Eric Fromm[5] expresses a philosophy that should inspire mutual activities in communities.

"The mastery of an art", he pointed out, "must be a matter of ultimate concern, there must be nothing else in the world more important than the art. This holds true for music, medicine, carpentry—and for love." The rest of my citation from this book I shall paraphrase, substituting the word "coordination" for the word love. Actually, community coordination implies love of community or desire to promote the community welfare.[6]

Using then the words of Fromm, with the one change—"In spite of the deep-seated craving for coordination almost everything else is considered to be more important than coordination; success, prestige, money, power—almost all our energy is used for the learning of how to achieve these aims and almost none for learning the art of coordination."

The dental public health administrator, desiring to organize the kind of community participation I envision must subordinate his personal interest and be ever alert to the welfare of the community. Similarly, official agencies and dental societies desiring to enlist the help of other groups for dental programs must prove that the welfare of the public is paramount in their planning.

To implement so admirable a concept the first step should be the organization of a community dental health committee or council.[7] It should be a part of a coordinating council of health and welfare or should help to organize such a body. The selection of its members should depend on the general and specific purposes of the dental program. A community leader who can enlist wide public support should act as chairman. Persons representing different civic activities as well as social economic and educational disciplines should be asked to serve on the committee. When such members are to be representatives of an official or voluntary agency, they should not be selected by the organizing group but by the official bodies that they represent.

The functions of all members should be explained specifically, preferably in writing. Dentists should provide authentic information, recommending what dental information should be publicized. Psychologists can suggest methods of motivation as well as procedures for pre-testing dental health education material. Public and parochial school personnel can help, not only in providing information of teaching methodology, but can also help the committee reach teachers and parents of pupils with printed materials and through interviews and conferences. Health department officials can provide opportunities for dealing with pre-school age children and their parents. Nurses, because of their familarity with problems in the homes, should be invited to participate. Parent-teacher associations can activate their members, not only to provide information concerning dental problems and health problems in the home, but also to motivate parents to provide adequate dental care for children. Staff members of newspaper, TV and radio stations can help in utilizing these media for oral health objectives.

In spite of the knowledge and skill of the members of the many community dental health committees, there has been a tendency to utilize their services only in an advisory capacity. Few have been assigned the more active role of implementing policies and procedures for dental programs.

In Philadelphia we have explored the idea of assigning significant responsibilities to our coordinating committees. The Council on Dental Health of the Philadelphia County Dental Society designated professional standards for all community dental programs.[8] Public and parochial school authorities decided where clinics were to be established; what school age children would be treated and how children would be brought to the clinics.

In the Philadelphia parochial school system,[9] a lack of escorts was the chief cause of children failing to keep clinic appointments. To arrange a more satisfactory service, district meetings were held with women engaged in charitable

activities to acquaint them with the dental program. Through these conferences volunteers were enlisted to provide regular escort service.

Recently, one of the agencies providing low-fee dental care for children requested a survey so that its program could be reorganized to fit changing conditions. The task of redirection was assigned to the Council on Dental Health and the Health & Welfare Council of the community.

Other community dental projects were initiated. A Work Conference, similar to this meeting, was held to discuss dental problems of pre-school children. Committees have been organized to consider feasible programs to deal with periodontal diseases and to provide dental care for homebound chronically ill persons. In March and April group meetings will be held to discuss dental programs in hospitals.

Leadership

Who should provide the leadership for the coordination urged in this paper? In Philadelphia, the Council on Dental Health of the County Dental Society proved a happy choice[10]. Its activities were sub-divided and assigned to various sub-committees. In this way, individual committees attacked specific problems, but enjoyed the benefits of integration by the Council on Dental Health.

Conclusion

As dentistry becomes inextricably involved in public health affairs, and as communities assume responsibilities for dental programs, the need for comprehensive planning becomes imperative. The participation and coordination of community health, welfare and education agencies are indispensable if the dental needs of the total population are to be met. Communities, I am sure, will find our dental societies ready to assume leadership in public measures designed to improve dental conditions.

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The nature of accomplishments during the past 10 years made this a decade of beginning in the field of dental public health. Water fluoridation, topical fluorides, oral cancer detection and control programmes, the team approach to the diagnosis and treatment of cleft lip and cleft palate cases, orthodontic care programmes, utilization of chairside assistants, the National Institute of Dental Research, approaches to the epidemiology of dento-facial deformities and periodontal diseases, and principles of prepayment for dental care services — all these are no better than well begun and several are in the budding stage. The objectives of all and the merits of most of them have been firmly established and are not in need of words of justification from me. Furthermore, if they are sound beginnings, then a mere glance in the direction of the crystal ball warrants the prediction that they will increase in scope and coverage during the years ahead. Only the pace is uncertain and subject to the whims of our will and effort and our success in improving the effectiveness of that effort.

John W. Knutson, D.D.S., Dr.P.H., F.A.P.H.A.

Education For Better Dental Health

MURIEL UPRICHARD, M.A., Ph.D., Toronto*

Those of us who are discouraged by the long slow process of education for health can take heart from the charming story reported in last Friday's 'Globe and Mail':

A nine-year-old boy was picked up by the police of Manchester, New Hamshire, smoking a long black cigar. The officer who was detailed to take him home asked him why he did not spend his money on candy and ice cream like the other children. He replied, "What, and get cavities in my teeth!"

But, even as we laugh, we realize that this will not do. The health of the mouth cannot be separated from the health of the rest of the body. Dental Health is a part of total health, and dental health education must be a part of total health education. In my opinion, education for health is one of the most difficult aspects of the educational process, and I would therefore like to spend a little time discussing the nature of education and of the particular difficulties in educating for health.

What is health? I can scarcely do better than quote the World Health Organization's comprehensive definition: "Health is not merely the absence of disease or infirmity but a state of complete physical, mental and social well being." We have conquered, or know how to conquer, many of the most serious hazards to physical health. Our real problem today is to develop a mentally and socially health conscious people, aware of their individual responsibility for the welfare of all, and ready and able to make use of the available health knowledge and techniques, both as individuals and as communities. It is this concept of total health that the modern health educator brings to the task of health education.

What then, is education? It would be futile to discuss this question at length in a short paper, for it has been a controversial subject amongst philosophers for twenty centuries. Suffice it to say that education seeks to bring about desirable changes in individuals through the inculcation of knowledge and the development of suitable attitudes and habits. As Ruskin has said, "Education does not mean teaching people what they do not know. It is teaching them to behave as they do not behave."

Herein lies the basic problem of health education. To impart knowledge is not sufficient. As we are all aware, my health is not affected by my knowledge but by my activities. It does not matter that I know I need eight hours sleep if, in fact, I never manage to get more than five or six. It does not improve Johnny's teeth for him to know he should clean them, unless he does clean them. The first problem, then, is what knowledge to give and how to give it so as to produce positive action on the part of the learner.

Why is this problem so difficult of solution? It is because we have conceived of education as the acquisition of factual knowledge, and tend to forget that human beings are not moved to action by knowledge but by emotion. It is, as someone has said, like loading the freight cars and failing to provide a locomotive.[1] Or to

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(1) N.E.A., A.M.A., Health Education, 2nd ed. Charles Wilson (ed.) National Education Association, Washington, D.C., 1947.

provide another analogy, it is as if the human mind were an iceberg, One ninth of it floats above the water. Eight ninths of it float submerged. We think of the one-ninth as being the real iceberg because we see it. But the controlling part is the great eight-ninths. The intellect is like the part of the iceberg above the water while the emotions are submerged. We think of the intellect as the important part of the individual, but, in truth it is the hidden depths of the emotional life that constitute the well spring of behavior. It is only when these hidden emotional forces are touched through the intellect that there can be any action.

Closely related to this is the fact that we learn many things at one and the same time. We may (or may not) be learning the facts to which our intellect is being directed. But we are learning attitudes about these facts. It is these attitudes, concomitantly learned and originating in the emotions that decide what action, if any, we will take in regard to the facts we have acquired.

Another important factor in the situation is that many, if not most, of our attitudes in regard to health and health practices are learned very early in life from the mother or the mother-figure. The habits are learned through imitation, and the emotional sets through identification. What the mother does the child tends to imitate. What the mother thinks and feels is communicated to the child in subtle and intangible ways and creates his first emotional concepts and attitudes. Such learnings, habits and attitudes stay closely with us throughout life and are difficult to change. Even though we later learn that many of these concepts are mistaken or limited, we tend to rationalize rather than to change them.

All this may seem to add up to a discouraging vicious circle of unhealthy mother, unhealthy child, unhealthy mother, ad infinitum. The pertinent question is, 'At what point or points can we break into this circle?'

The crucial points would seem to be the parent, especially the parent of the young child; the dentist, especially the dentist dealing with children; and the school at all levels. Though these are related, let us look at them one at a time.

Ideally the basis for good health, including good dental health, is laid in the home. Here the child develops a pattern of good health habits, learning to eat the correct foods, to keep himself clean, to acquire a healthful rhythm of rest and activity, and to develop a positive attitude towards good health practices. In actual fact, we know to our sorrow that this does not always happen. This may be because of ignorance on the part of the parents. There are undoubtedly some parents who do not know what to do about the various aspects of child health. In this country, however, it appears to be less a matter of lack of knowledge than of lack of will. The attitude of many parents is neutral or negative. They do not feel the establishment of good health habits in their children sufficiently important to be worth reorganizing their pattern of life in order to help the children acquire them. This combination of ignorance and apathy plays havoc with children's teeth. For example, ignorance of the importance of the foundation teeth leads to their light dismissal. "That's only a baby tooth', is all too often heard. Even where parents are informed, they often find it impossibly difficult to keep sweet foods, pop, candy and so on from the children, and to enforce the after-meals brushing routine. All too often the children take over from their parents a fear of the dentist, even before they have seen him. The children, then, are often learning wrong facts, wrong habits and acquiring attitudes of indifference and fear from their parents which may persist throughout life.

All this means that we must make a concerted and determined effort to educate adults, and particularly parents. This is difficult because adults tend to regard matters pertaining to their health as intensely personal. I feel that when I get up and go to bed, what and when I eat,

whether or not I brush my teeth, is my own private business and I resent anyone stepping in from the outside to tell me when or how to do these things. The point at which I am most accessible for teaching is when I voluntarily seek help from my doctor or dentist. This is, I believe, the reaction of the average adult, and therefore, health education at this level must be handled with great tact, understanding, and a good deal of humour. It must, however, begin where the pupil (and not the teacher) is in his thinking, and is most effective on an individual basis when the adult has sought help in answer to a need that he himself feels.

On the positive side is the fact that most parents desire the best of everything, including health, for their children. There is probably no point in the life of a woman when she is so ready, both emotionally and intellectually, for health teaching as when she is expecting a child, particularly her first child. Because of this state of readiness, much might be accomplished if every expectant mother could be alerted to her child's dental needs as part of her prenatal education. A coordinated effort on the part of obstetricians, general practitioners, public health nurses, staffs of prenatal clinics, and the dentists themselves could educate young mothers regarding the part good dental health plays in total health and the need for care of the teeth through diet, cleanliness, and regular professional dental supervision from the age of two years. The medical, dental and nursing schools could assist by providing specific instruction in the amount and nature of the factual material to be presented to each parent, and by equipping their students with some knowledge of the nature of the learning process. Departments of Health and professional associations could help by making printed teaching materials available for distribution at suitable times.

Though teaching expectant mothers is probably our most hopeful channel, no opportunity should be lost to teach adults, and particularly parents and teachers, on an individual basis. The public health nurse in the school, in the clinic or in the home, the dentist with a parent or teacher in his chair, the doctor giving the routine examination – all have opportunities to teach dental health. It is important that they be alert to these opportunities and make the maximum use of them.

A third possible source of adult education is the adult community group, club, or society. To these the dental association should lay continuous seige. Using good speakers, films, and printed literature, there is a hope that over a period of time, the general standard of knowledge may be raised, and some parents sparked to action. The effectiveness of this type of campaign is in direct proportion to the emotional appeal of the speaker or film and not to the size of the audience. Dull factual speeches and heavy unattractive brochures do less than no good. In fact, they may serve to reinforce the resistant and negative attitudes that already exist.

Another channel through which adults may be influenced is advertising. We all know that advertising pays. We also know that it costs money. We let the latter consideration override the former and are satisfied with a little occasional advertising when what is needed is a continuous programme of suitable articles, plays, squibs, cartoons, posters, spots on radio and television, and so on. In this area a great deal of research is needed, for here again, bad advertising is probably worse than none at all in that it reinforces negative attitudes. Much of the material that is at present produced is perhaps useless for the purposes intended. We need to study the whole field of health literature for public display and consumption and make a concerted effort to produce well designed materials for each age level and need. This is the responsibility of the professional organization, the voluntary agencies and the government departments of health and welfare.

The second important way in which we can hope to curb the downward descent of our vicious circle is through the activi-

ties of the dentists as individuals and as a profession. There can be no substitute for good dental care given by a competent and interested dentist and accompanied by teaching at the level of the patient. For this reason it is important that dentists be more than skilled technicians. They must regard preventive dentistry as urgent, and those who are qualified by nature and training should give some priority to children's dentistry. This demands not only the ability to work with the children but to teach them, for every child's visit should be an educational experience for the child. The activities of the dentists as a profession are also of prime importance. The relationships that are created with individuals and with other groups in the community are an important factor in the development of the thought of that community regarding the importance of dental health.

The work of dentists is greatly hampered in Canada by the acute shortage of personnel. Every effort must be made to recruit and educate a greater number of dentists. This is a many-sided problem. In the first place, more candidates for dentistry means more facilities for education and more teachers in the schools of dentistry. In the second place, it is difficult to find the candidates. We are short not only of dentists but of personnel in all health fields and in the closely related fields of education. To some extent a vigorous recruitment campaign for dentists can only result in a greater shortage of personnel in one of the related professions. The real solution may lie in finding ways and means to encourage and assist more young people to complete high school and go on to the university. This might be done through a system of scholarships, bursaries and loans. This is an aspect of the problem that the dental association might well study in collaboration with the relevant government departments.

Another means of overcoming the shortage of dentists is to increase the power potential of each one. Take, for example, the dentist as teacher. We are agreed that every dentist should regard himself as a teacher. But this is not enough. He needs to be a skilled teacher capable of presenting the facts in such a way as to develop the positive emotions that spark knowledge into action. When the patient feels no need to learn to change his habits the dentist must be able to arouse such a feeling of need. Further, he must be able to assess the level at which teaching can best be offered each individual patient. Unless he has such skill, he may offer knowledge that the pupil cannot fit into his limited background, or, at the other extreme, knowledge that is so elementary as to be insulting to the intelligence of the learner. In the one case the pupil takes the fact in isolation and is not able to do anything with it because he cannot fit it into the total pattern of his thinking. In the other case, the learner is still hungry for the kind of knowledge that will satisfy his need, but feeling that the dentist is not willing to share his greater knowledge, goes away unsatisfied and unhelped in regard to his health problem. One way, then, to increase the power potential of the dentist is to help him to understand the learning process. This is, of course, a task for the schools of dentistry.

Another closely related task of facing the schools of dentistry is that of assisting dental students to develop into mature personalities. Many of the problems of modern society are problems of interpersonal or inter-group relationships. In the dental field such problems range all the way from the fluoridation of the community water supply to arranging in-school-hours appointments for children. Such problems can be resolved only by the wisdom and maturity of the professional people involved. As well as knowledge and skill in his field, the student dentist needs to be participating in an educational experience that will mature his personality and bring him into touch with and understanding of the

community in which he must work.

The third channel through which we can work for better dental health is the school. The influence of the school is very great. This is particularly true at the kindergarten and primary levels. In fact many young children will identify so closely with a skilled teacher that for a time what she says may become more important to the child than what the mother says. If the teaching of the one reinforces the other, there is no problem. But when one contradicts the other, the mother may resent the teacher and seek to nullify the teaching. Personal contact between teacher and parent is, therefore, essential, and the maturity of the teacher in handling the situation so as to gain cooperation is a vital factor.

Both what the school teaches and how it teaches are important. The school should seek to build upon the real interests and needs of the pupil. Young children are interested in health from the standpoint of how its practice affects their personal comfort, appetites and elementary bodily functions. Children in the middle grades are more concerned with adventure, the exploits of heroes, and consequently with physical prowess and the influence of health practices in promoting their own sense of power and their control of the environment. Adolescents are interested in those aspects of health which help them towards maturity – they seek to be grown up, independent, beautiful or manly, and attractive to the opposite sex.[1]

By starting from these natural needs and desires of children, and modifying them to specific classroom, community and individual needs, the teacher can select the most useful facts to be imparted to any group of children. If the teaching of facts is to be effective, however, in producing action every child must see clearly the connection between the goal desired by him and the fact being taught.

One of the most serious mistakes made in the teaching of health is to try to teach too many facts too soon. Health teaching is not to be confused with the teaching of the sciences of hygiene, anatomy or physiology. Such premature efforts merely fill the mind with inert facts that confuse the child and inhibit his understanding of the general underlying principles of health practice. When at a later age this type of teaching becomes valid, the pupil feels it is old stuff and is not interested in going over it again. This is one of the reasons that high school students sometimes find health education boring.

At the primary level the teaching should be largely devoted to teaching what to eat for good dental health, keeping teeth clean, going to the dentist and so on. The middle school is time enough to introduce such teaching as the structure of the tooth, why it decays, etc. The secondary school should be still more mature in its explanations and should begin education for parenthood by explaining such matters as the development of teeth in childhood, the need for early care, and the diet suitable for tooth and bone growth in young children. It is only when the teaching is thus related to the needs and interests of the age group that it can be effective. Because of the importance of the health teaching being based on the needs and interests of the children being taught—it might be worthwhile for the dental association to cooperate with other interested groups in making a survey of the needs and interests of the children of their locality.

The most important factor in health education (as in all education) is the quality of the teacher. She needs a warm and outgoing personality, and a knowledge both of the subject matter to be taught and of the children under her care. Next in importance is a suitable school environment. It should make possible the practice of the precepts taught by the school. In dental education one of the most important of these items is the

(1) Grant, Ruth, Health Teaching in Schools, 2nd edition, W. B. Saunders Co., Philadelphia, 1953.

eating of suitable foods. No school should make available to the pupils for lunch or between meal snacks foods that do not foster the dental health of the children.

Books, posters, charts, films, film strips and other such teaching aids can all be helpful if they are well produced, graded to meet the variety of needs, and freely available for use. As with adult teaching materials, research needs to be done on the most effective media for different kinds of subject matter, age groups and purposes. Some effort might be made to coordinate the efforts of voluntary and official agencies so that more effective materials would be produced for the money spent. Practising teachers have found, however, that expensive, commercial materials are not necessary for good teaching. In fact there is some evidence that materials made by the children themselves are the most effective in producing desirable behaviour patterns.

The good teacher uses opportunities that arise in the school to foster health consciousness and builds her teaching around them. Much valuable teaching can be centred around the health services of the school. When the dental service arrives to examine teeth, or when children are receiving treatment, is the ideal time to teach a unit of work on the care of the teeth. Teacher, nurse and dentist should cooperate by teaching the same or related facts, and by urging the same health practices. Ways and means should be found of contacting parents and securing their cooperation. Maximum use of the health service as an educational experience demands good cooperation between the departments of education on health.

Science knows no simple means of improving the dental health of the people of any community. We must do our best with the three tools we have at hand: preventive techniques, dental knowledge and skill, and education. Of these education is in a sense the least important because it does nothing practical to improve the situation. In another sense, however, it is the most important, for it only as better insights and understandings develop in both the general public and the members of the dental profession that the optimum use can and will be made of the known preventive and therapeutic measures.

Since prediction and hope have now been commingled, I should like to refer to the most obvious yet most elusive stars in the firmament of the future — principles of public health administration, health programme promotion, and health education. I am referring, of course, to our basic lack of knowledge of the forces which motivate people to action in relation to health matters or which foster doubt, indifference, procrastination, and even violent opposition based on bizarre combinations of information and misinformation. The striking similarity in frustrating experiences in the promotion of water chlorination, beginning with this century, and today's programme of water fluoridation should point up the long overdue need for basic sociological and psychological studies in this area.

John W. Knutson, D.D.S., Dr.P.H., F.A.P.H.A.

EDITORIAL

The Desirability of Community Participation in Public Health Programmes

Public health has been defined as the art and science of preventing disease, prolonging life and promoting physical and mental efficiency through an organized community effort. Too often many of us have forgotten the latter portion of that definition and have failed to realize that no matter how sincere or conscientious the work of those engaged in public health may be, the effect of the efforts is negligible without the concern and co-operation of those whom the public health workers are attempting to assist.

It is a demonstrable verity that organizations, societies, or associations function best when all members have opportunities to participate. Criticism comes only rarely from those who engage, to the extent of their abilities, in the affairs of the group, while paradoxically those who take little or no part are not hesitant to condemn or to deprecate.

Too frequently programmes in public health have been developed to do something to or for people, rather than to do something with them. Instead of harnessing the abilities and enthusiasm of the group we have ignored these factors, and thus have left untapped a huge reservoir of unknown resources for responsible leadership.

Our country is large. From east coast to west is a distance of approximately 3,500 miles and the area of Canada is in excess of 3,700,000 square miles. Our population is over 16,000,000. To care for these people in this land we have fewer than 5,500 practising dentists. It should be reasonably apparent then and with the enormity of the dental disease problem, the profession cannot solve the difficulties alone.

Because community health programmes invariably must receive sanctions from elected and/or appointed councils and boards, a degree of education must of necessity precede any hoped-for action. If the project being promulgated possesses little or no political appeal or evenly conversely is felt to engender political opposition, then the matter has little hope of institution unless a weight of political pressure is brought to bear in its favour. Many public health matters fall into this category.

By now, the members of the health professions should be aware of their relative political impotence. Action to date on fluoridation, dental services in hospitals, funds for dental research should be sufficient examples to demonstrate the difficulties inherent in the professions making their views felt in governmental areas. Matters which pertain to the welfare of the profession should be the sole concern of the profession, but surely

community aid should be enlisted when the betterment of the health of the public is the goal which is sought.

While, no doubt, we have realized the value of lay participation as far as public health dentistry is concerned, our interest has, in the main, been academic and we have observed the concept mostly in the breach.

On February 21st last, the Academy of Dentistry sponsored, as far as we know, the first Community Dental Health Workshop Conference in Canada. This conference was of such significance and importance that decision was made to publish the results of the deliberations and the various addresses coincident with the meeting. This issue is dedicated to that task. For one day dentists, physicians, nurses, teachers, social workers, educational administrative personnel, representatives of Home and School and Parent-Teacher organizations, nutritionists, and others deliberated upon three different areas of consideration in the dental public health field – dental needs, dental resources and dental health teaching practices. The resolutions drafted and approved may or may not prove effective. But of greater significance is the fact that representatives of the general public became more acutely aware of the enormity of the dental health problem, the measures presently being taken to ameliorate the difficulties, and the proposals of the dental profession for action both now and in the future. The need for support of research activities, provision of increased facilities for the training of dentists and dental hygienists, the responsibility of the community toward instituting those measures requiring community action were but three projections brought into clearer focus. It was interesting to note that in all three discussion groups each member had something tangible and constructive to offer and through that contribution each became more interested in and conversant with the problems presently engaging the limited personnel and resources of the dental profession.

A complete documentation of the resolutions of the Workshop appears elsewhere in this issue and no need exists here for reiteration. However one resolution receiving enthusiastic and unanimous endorsation was the resolution which brought into being the Dental Health Council of Toronto an organization of representative citizens established to attempt to perpetuate and promulgate the aims of the conference and to activate the proposals contained in the resolutions. This is an example of the profession working with the public in the hope that through community participation and action effective measures may be taken which will result in better dental health for the generations to come.

SPECIAL CONVOCATION – WINNIPEG, JUNE 23-26, 1957

The University of Manitoba is holding a special Convocation in conjunction with our convention.

Three or four outstanding dentists from Canada, United States and possibly Great Britain, will receive Honorary degrees on the occasion. This is indeed a singular honour for the dental profession, and one of which we are proud. The special convocation will indeed be a "convention highlight" in Winnipeg this coming June.

Canadian and Ontario Public Health Associations Meeting Program

MONDAY, MAY 27th, 1957 — Afternoon

DENTAL SECTION

2.00 P.M.	**R. M. Grainger,** Dental Statistics & Research Section, Division of Medical Statistics, Ontario Department of Health.	Purposes and Methods for the Evaluation of Community Dental Health.
2.40 P.M.	**G. Nikiforuk,** Division of Dental Research, University of Toronto.	Evaluation of Caries—Preventive Measures Applicable at the Community Level.
3.20 P.M.	**D. S. Catton,** Vickers and Benson Limited.	Television and Radio Presentation Techniques Relative to the Promotion of Dental Public Health.
4.00 P.M.	**Business Meeting.**	

TUESDAY, MAY 28th, 1957 — Afternoon

DENTAL SECTION

F. A. Kohli (Chairman), Director, Division of Dental Services, Ontario Department of Health.	Conference on "Report on Qualifications, Functions and Training of the Public Health Dentist".

WEDNESDAY, MAY 29th, 1957 — Morning

HEALTH OFFICERS AND DENTAL HEALTH SECTIONS

R. A. Connor (Chairman), Dental Health Officer, Lincoln-St. Catharines Health Unit.	Symposium: "Integrating the Dental Hygienist Into a Community Health Programme."
(a) **Mrs. Andree Brunelle,** Supervisor, of Training in Dental Hygiene, University of Toronto.	The Curriculum Content of Courses in Dental Hygiene.
(b) **Miss Hamner,** Supervisor, Nursing Division, Lincoln-St. Catharines Health Unit. **Miss Mary Iskey,** Dental Hygienist, Lincoln-St. Catharines Health Unit.	The Dental Hygienist in a Health Unit Dental Programme.
(c) **Miss M. Smillie,** District Supervisor, Division of Public Health Nursing, Toronto Department of Public Health. **Miss G. T. Shachter,** Dental Hygienist, Toronto Department of Public Health.	The Dental Hygienist in a Metropolitan Health Department Programme.

WEDNESDAY, MAY 29th, 1957 — Afternoon

GENERAL SESSION

H. K. Brown, Dental Consultant, Department of National Health & Welfare.	"Where Are We Going in Dental Public Health?"

All meetings held at the King Edward Hotel in Toronto.

DENTAL HEALTH SECTION EXECUTIVE

Chairman:

Dr. F. A. Kohli, Director, Division of Dental Services, Ontario Department of Health.

Secretary:

Dr. M. E. Jarrett, Dental Health Officer, Wellington County Health Unit.

Program Chairman:

Dr. F. H. Compton, Director, Division of Dental Services, Toronto Department of Public Health.

BOOK REVIEWS

"A Symposium of Preventive Dentistry". Prepared by: Joseph C. Muhler, D.D.S., Ph.D. and Maynard K. Hine, D.D.S., M.S. Published by: C. V. Mosby Co. Pages: 247. Price $6.75.

This book is a summary of "current thinking on the subject of preventive dentistry" as presented in a symposium by twenty-four recognized authorities in this particular field.

The first chapter deals with the meaning and scope of preventive dentistry. This is followed by a chapter on epidemiology and its value in dental caries research.

The major portion of this book deals with the Aetiology, control and prevention of dental caries. The various factors as related to each phase are dealt with, namely: the role of bacteria, microbic dental plaques, saliva, carbohydrates, fat, nutrition, heredity, home care, public health methods, topical fluoride therapy, enzymes and enzyme inhibitors, operative dentistry and clinical management.

The subject of preventive periodontics is covered under the following headings: (1) epidemiology, (2) nutrition, (3) bacteria, (4) calculus, and (5) clinical procedures.

The role of the dentist in the recognition of oral manifestations of systemic disease and oral cancer is stressed in separate chapters. In the field of preventive orthodontics consideration is given to dentofacial development and other factors as related to occlusion.

The text ends on the theme "How should preventive dentistry be taught in the dental schools?"

In summarizing, this book with its excellent references, is the best and most comprehensive yet published on the subject of preventive dentistry. However, it falls short in that the greatest emphasis is first on dental caries, less on periodontal disease, and least on dentofacial development.

When one considers that a thorough understanding of the biological processes underlying dentofacial growth and function (i.e. the teeth, supporting tissues, hard and soft tissues and musculature) is fundamental to the practice of preventive dentistry, this phase should be given first and most extensive consideration.

J. Kreutzer

The Dental Business Office — edited by: C. Edward Rutledge, D.D.S. and Edward Winsor, published by Lea & Febiger, Philadelphia. 152 pages.

This is a book that could be read profitably by every dentist. It is just a little book; fourteen short chapters dealing with the business aspects of dental practice. It is full of meat.

The author is no theorist. He is a man with practical experience who has thought out helpful suggestions for dealing with common problems that constantly arise in every day practice administration.

The opening chapter deals with philosophy and business. Are you moulding the type of practice you will enjoy most and is best suited to your temperament? This is a topic too few of us have really thought about.

Other typical chapters, which are really lectures, deal with such matters as "financial arrangements" with patients; "office credit policy"—this chapter presents quite modern thinking on credit and includes a discussion on organization of post payment plans; "recall systems" for regular dental care; "office personnel," "writing of collection letters"—and so forth.

There are three chapters dealing with group practice—its organization, advantageous operation and administration. This is a new trend in dental practice and the discussion presented should be exceedingly interesting to the dentist with more patients than he can comfortably serve.

Generally speaking, the dentist has been too busy to give much thought to reviewing the operation of his business. In any leisure time he has for professional reading and study, he seeks to improve his knowledge of dental science. That is commendable. However, practice is the dentists' business and no business runs smoothly and efficiently without attention. Here is a book about "Dental Business", to take home for a week end of reading enjoyment and profit. It is well written and has many stimulating and thought promoting ideas that you have been looking for.

Get yourself a copy.

T. R. Marshall

Prescription Writing and Materia Medica for Dentists by Dr. L. Richard Cipes.

Published by: Dental Items of Interest Publishing Co. Inc. Page: 572.

Great care has been taken in the writing of this book to completely cover the modern concepts of prescribing and utilizing the drugs that are so important to professional men in the field of dentistry.

All important drugs are listed as to their uses, dosage, action and side affects. The metric system of weights and measure are almost exclusively used. This follows the latest teaching in our universities. The avoirdupois system is noted but not encouraged.

The author has stressed the practice of modern prescription writing in English rather than the older and outmoded style of latin abbreviations. This type of prescription writing is clearer to all concerned and much easier for the student to comprehend. There are less mistakes made in directions and dosage with the simplifying of prescription writing. The examples listed are excellent and should be used more by the profession.

Particular attention should be paid to the chapter on antibiotics. All types of these drugs are listed under the headings of chemistry, pharmacology, bacterial sensitivity, sensitivity to patients, potency, toxicity and blood levels. The many uses and indications for antibiotics are clearly explained and quite easy to follow.

Not only has the author outlined the proper methods of prescription writing but also the federal laws that govern the use of certain drugs. This is very important especially when dealing with narcotics.

This book has been carefully planned to fit the needs of students and practitioners and can be highly recommended for both reference and reading.

M. J. Gibson

CORRESPONDENCE

Dear Mr. Editor:

A matter of some moment dictates the writing of this epistle, in which all our remarks are well tempered rather than hostile, because of the high calling of our profession.

British Columbia dentists take exception to the following statement which appears on Page 44 of the January 1957 issue:

> "The first closed-circuit televising of a dental operation ever held at a Canadian Dental Convention took place in Toronto during the winter clinic of the Academy of Dentistry." (Nov. 22, 1956).

It may be maintained by usually reliable sources close to 234 St. George Street that British Columbia is not a part of Canada and may not even lay claim to Colonial Status. However, we aver, sir, that proof can be established in the form of Income Tax Notices, Federal Cabinet Ministers, Bilingual Currency, etc., etc. that we are in point of actual fact a part of this great Dominion even if our Credit is somewhat Social.

On May 7, 1955, at the Annual Convention of the British Columbia Dental Association, closed-circuit television was employed for a paedodontic clinic in the Vancouver Hotel, with Dr. Gordon Jinks operating to restore fractured anterior teeth. This presentation was not hailed from the housetops, so it could have been overlooked.

At our next British Columbia Convention, in the Vancouver Hotel, on May 8, 1956, closed-circuit television was again employed. I quote from the Canadian Dental Association Journal for July 1956, page 430:

> "A clinic on high speed was given by closed-circuit television. It proved highly successful, as the 20 outlets enabled everyone to witness the operations which were performed on the stage". (D.H.M.).

The fine-print readers in British Columbia apologize for their temerity in bringing this matter to your attention.

Sincerely yours,

W. Ross Upton, D.D.S.,
Executive Secretary,
British Columbia Dental Association.

• *O Death, where is Thy sting?* — Ed.

THE ASSOCIATION

Deductibility of Pension Payments

In his Budget presentation on March 14th, 1957, the Minister of Finance said:

"It is now proposed to introduce a general policy of allowing tax postponement on limited amounts of earned income set aside for retirement by any taxpayer whether an employee or not. This privilege will be of general application.

"To be eligible for income tax deduction a taxpayer will be required to file with his return a receipt of an amount paid towards the purchase of a particular kind of annuity. The annuity must be payable in equal annual amounts for the full life of the taxpayer and it may provide upon his death for annual payments to his spouse not exceeding those he was receiving. The annuity may provide for a term certain up to fifteen years. It may be arranged to commence at such time as the taxpayer wishes, but its commencement may not be postponed beyond age seventy. However, once the taxpayer starts receiving payments under an eligible annuity he may make no further income tax deductions for retirement income. These annuities will not be assignable and the person issuing them may not redeem the contract for cash or make any loan against them. With 'in-payments' free from tax the 'out-payments' under a registered retirement annuity will, of course, be fully taxable.

"Payments toward the purchase of the type of retirement annuity just described will be deductible from income for tax purposes up to 10 per cent of the taxpayer's earned income, but the dollar amount deducted in any year may not exceed $2,500. If, however, a taxpayer is currently paying into a registered employer-employee pension plan, the dollar limit on his deductions for a separate annuity contract outside the registered plan together with his contributions already being made under the employee plan may not be more than $1,500 a year. If, for example, an employee is now contributing six per cent of his earnings under a pension plan he may, on his own account, use another four per cent of his earned income to purchase a retirement annuity supplementing the pension being built up in his employment, always subject to the maximum of $1,500."

Under the resolutions introduced in the House of Commons to amend the Income Tax Act, Resolution Eleven states in part:

"That for the 1957 and subsequent taxation years an individual be allowed to deduct, in computing income, an amount paid by him as a premium under a registered retirement savings plan and, for this purpose, that the Income Tax Act be amended to give effect to the inclusion therein. . ."

All plans for this purpose must be approved by the Minister.

For several years the Canadian Dental Association, together with several other national organizations, has made presentations seeking such amendment to the Income Tax Act. Appreciation for the action taken has been expressed to the Minister by the Association.

In our opinion this provision will be found most advantageous to members of the dental profession. Some delay will occur while approval of plans is being obtained. It is anticipated that details will be available under the C.D.A. Pension-Assurance Plan in the near future.

Bill No. 47

An Act for the Establishment of a Canada Council for the Encouragement of the Arts, Humanities and Social Sciences.

Under the terms of this bill the Canada Council is established to handle 100 million dollars of government-provided capital. The Minister of Finance will pay to the Council two separate sums of 50 million dollars. One will form an endowment fund for the Council's own use. The other will be called the "University Capital Grants Fund." The personnel of the Council has not been named as yet.

Grants from the University Capital Grants Funds are to be made over the next decade. Based on a formula in relationship to the population in each province. It was hoped that assistance for professional schools would be provided for but the bill strictly confines the grants to the Arts, Humanities and Social Sciences.

During the debate in the House, Mr. Hees, member for Toronto Broadview raised the question of assistance for engineering, medical and dental faculties in the universities. The Prime Minister advised Mr. Hees "not to lose too much sleep over his wrong impressions".

Kellogg Foundation Reports Nearly $200,000 for Dentistry in Canada

The Annual Report of the Kellogg Foundation just issued, reports, appropriations of $191,971 for Canadian dentistry. These appropriations consist of the following:

Canadian Dental Association	
To assist the Council on Dental Education to develop a program of accreditation and consultation services for the Canadian dental schools	$ 6,155
To develop in-service training for faculties of Canadian dental schools through a series of regional conferences	3,150
Fellowships	
Dalhousie University	4,001
McGill University	6,665
To strengthen Canadian dental schools through faculty training for the further development of their programs of undergraduate and postgraduate education	
Dalhousie University	172,000
To expand faculty and facilities for a regional center of pre-service and in-service education for the Maritime Provinces	

Of these appropriations $23,057 was paid during the year 1955-56.

Past-President Ratte Retires from Board

Dr. G. Ratte of Quebec has retired from the Board of Governors after 11 years' service. He was President of the Association for 1952-53. Over the years he has served on several committees and continues to work assiduously in the interests of the Association. He is succeeded on the Board by Dr. Remy Langlois of Quebec.

Dr. L. I. Duffy of Charlottetown has also retired from the Board being succeeded by Dr. A. W. Allan.

Fort Smith Approves Fluoridation

The Northwest Territories Council has approved fluoridation of the water supply of Fort Smith a community of some 800 persons. The fluoridation project, proposed by the local health officer, was approved by the federal department. Fort Smith is located just north of the N.W.T.-Alberta boundary and is the most northerly community in Canada to adopt fluoridation to date.

The U.S. Courts and Fluoridation

Throughout the history of the United States the courts have played a great role in the molding of public opinion and in the evolution of administrative practice. In no area of public significance have the judgments of the courts had a greater impact than in the field of public health. It is not surprising therefore that, once more, judicial opinion is paving the way fairly rapidly for the use of water fluoridation as an important and acceptable public health measure.

James A. Tobey has performed recently a great public service by summarizing the present status of court opinion in this highly debated area. A succinct epitome of his findings is best stated in the opening paragraph of his survey, as follows:

"Proper fluoridation of public water supplies does not infringe the constitutional rights of individual citizens. This principle is now well-established in American jurisprudence. Between 1953 and the end of 1955 the Supreme Court of the United States and the courts of last resort in six states have ruled that this procedure is a valid and reasonable exercise of the police power of the State in the interests of the public health, and that it does not violate any of the rights of individuals vested in them by the Federal and State constitutions."

The unanimity of court opinion has been astonishingly complete, considering not only the number of cases already adjudicated, but the spectrum of issues raised in the religious, the pseudoscientific, and the political fronts. Patterns of opposition have been likewise uniform in character and not infrequently stimulated by well financed national groups. Virtually without exception

the courts have considered the objections invalid and undue interferences with decisions of high public health import.

Since 1952, the date of first court opinion, favorable decisions are at hand from San Diego, Baltimore, Northampton, Fargo, Chehalis, Cleveland, Tulsa, Bend, Greenville, and Milwaukee. In Shreveport an injunction against fluoridation was later reversed by the Supreme Court of the State of Louisiana.

In general Tobey points out the courts have made clear that fluoridation is of great importance and beneficial to all citizens; that "such a measure was not arbitrary or unreasonable, not medication, not adulteration, not class legislation, and not in violation of any constitutional privilege, including religious freedom."

Tobey, long a student of public health law and the author of some of the few authoritative texts thereon, adds the significant comment that:

"Whenever the exercise, or alleged exercise, of the vested right of religious freedom has come in conflict with public health laws and procedures, which likewise have a solid constitutional basis, it is the public health which invariably has prevailed, and in the nature of things must always prevail. Fluoridation of municipal water supplies not only is now an accepted and established scientific procedure, but it is sanctioned by the law of the land."

—Editorial—American Journal of Public Health—Dec. 1956 issue.

Device for Reducing Fluoridation Costs

Development of a new device to reduce the cost of adding fluoride to community water supplies was announced last month by the U.S. Public Health Service. The present per capita cost, which averages 10 cents a year, is expected to be reduced to 3 cents a year.

The new device is a dissolver which makes it possible to use fluorspar, the least costly form of fluoride. The dissolver was developed by two P.H.S. scientists, Mr. F. J. Maier, sanitary engineer director, and Mr. Ervin Bellack, chemist, both of the Division of Dental Public Health. A report of the results of their research appeared in the January issue of the Journal of the American Water Works Association.

The new dissolver is not yet on the market, but private industry is expected to begin manufacture shortly.

Municipalities Which Have Fluoridated Water Supply

As of January 1957

Municipality	Date When Started	Population
Newfoundland		
none		
Prince Edward Island		
none		
Nova Scotia		
Halifax	June 11/56	90,871
Dartmouth	July 3/56	20,004
Kentville	Feb. 16/56	4,840
New Brunswick		
none		
Quebec		
Point Claire	Feb. 3/55	15,067
Sillery	Oct. 19/55	13,800
Ontario		
Brantford	June 20/45	51,557
Brockville	Feb. 19/56	15,000
Deep River	Dec. 9/52	3,000
Fort Erie	Jan. 18/52	8,567
Oshawa	Feb. 26/53	50,136
Sudbury	Aug. 29/52	60,000
Thorold	Feb. 12/52	8,001
Tisdale Township	Oct. 3/55	8,000
Manitoba		
Brandon	March 8/55	24,579
Winnipeg	Dec. 28/56	409,687
Saskatchewan		
Assiniboia	May 1953	2,500
Moose Jaw	December 1952	29,282
Saskatoon	July 1955	70,843
Swift Current	October 1954	10,468
Weyburn	March 1955	7,616
Wynyard	August 1956	1,492
Alberta		
none		
British Columbia		
Kelowna	Sept. 15/56	8,924
Prince George	Sept. 13/56	12,500
Smithers	June 21/55	1,936
TOTAL		928,665

COMMITTEES AND COUNCILS

Dental Education

The terms of reference laid down for the Council on Dental Education are stated in part:

1. To give study to all matters relating to dental education.
2. To develop policies and make recommendations of the same to the Board of Governors in respect to matters pertaining to the education of dental students.
3. To accredit schools.
4. In general to discuss and recommend alterations in dental education for the improvement in welfare of students of dentistry, in order to produce graduates equipped with adequate knowledge to fulfill all the requirements of the practice of dentistry and to take their proper positions in society as a whole.

At the recent meeting of the Council it was noted that on January 1st, 1957, the number of students in Canadian Dental Schools had increased by 16 over last year's enrolment, due almost entirely to a higher registration at the University of Montreal and the new figure of 785 is the highest since session 1950-51. It was also noted that the number of graduates during 1956 was the lowest since 1948. Of these graduates 7% were women, the highest on record. Canadian students in dental schools in the United States totalled 39, while 42 United States students are attending Canadian Dental Schools. It was observed that there can be no appreciable rise in the number of graduates until dental school facilities are increased.

In a report from the sub-committee on the extension of teaching facilities it was noted that construction is under way on the new dental building at Dalhousie University. These new facilities are expected to be ready by the end of 1957. From Toronto came word that final working plans for a new dental building may be completed by mid 1957, and that tenders will be called immediately thereafter. If the present construction schedule is adhered to it is anticipated that this new building may be ready for the fall of 1959. Progress is reported in the efforts to establish new dental schools at both the Universities of British Columbia and Manitoba.

In an effort to integrate the work of the Council with other Committees, the Council on Dental Education usually invites the Chairman of the Research Committee and the Chairman of the Hospital Services Committee to report on matters of mutual interest. Research and internship training programmes concern various groups of workers.

After reviewing questions relating to the education of Dental Technicians it was agreed that the Council should prepare a statement on this subject. The following resolution was subsequently adopted: "This Council recognizes the need for the establishment of training courses for Dental Technicians and in the opinion of this Council such courses of training should be given in Vocational Institutes with members of the Dental Profession, including members of the staffs of dental schools, co-operating in providing such instruction."

A sub-committee of the Council has been studying for some time admission requirements as laid down by dental schools in Canadian Universities. Because of variations which exist today in

these requirements some confusion arises particularly in Universities where there is no dental school, but where there are students preparing themselves for admission to dentistry. While there is no desire or intention to set a rigid pattern for all Canadian Universities in this matter, it is hoped that the present study will further clarify the issue.

The Council has from time to time participated in and been responsible for the promotion of conferences among teachers in specific subjects. Conferences on "teaching methods" have been provided at the University of Toronto and the University of Alberta. During the course of the next 12 months similar conferences will be held at Dalhousie University and in Montreal for McGill and the University of Montreal. It is planned in the near future to hold a conference for the teachers of the subjects of Office Management, and associated fields.

These and many other projects are on the long-term agenda for the Council on Dental Education.

In keeping with the terms of reference all of these projects and indeed the entire programme of the Council on Dental Education is designed to promote improvement in dental education in all Canadian schools.

Roy G. Ellis,
Chairman.

CANADIAN SOCIETY OF DENTISTRY FOR CHILDREN

ANNUAL MEETING, MAY 11, 1957

Royal York Hotel, Toronto

PROGRAMME

9.00 a.m. — Table Clinics

10.30 a.m. — Nutritional Influences Upon Oral Diseases.
DR. JAMES H. SHAW, Harvard School of Dental Medicine, Boston, Mass.

11.45 a.m. — Business Meeting
Luncheon (cost included in membership).

1.45 p.m. — Restorative Procedures for the Child Patient.
DR. C. R. CASTALDI, Department of Paedodontics, Faculty of Dentistry, University of Alberta.

3.00 p.m. — Symposium on Cleft Palate Habilitation.
Participants: M. A. COX, M.D., Paediatrician; W. J. SPENCE, D.D.S., Director, Cleft Palate Research and Treatment Centre; W. K. LINDSAY, M.D., F.R.C.S.(C); NORMA FORD WALKER, Ph.D., Director and Associate Professor of Human Genetics; J. B. WHALEY, M.D., Chief, Ear, Nose and Throat Department; RUTH LEWIS, M.A., L.C.S.T., Speech Consultant.
(All are from the Hospital for Sick Children, Toronto)

Address inquiries to Dr. William J. Spence, Secretary, 3000 Yonge St., Toronto

ECONOMIC SECURITY

Professional Liability of Dentists

EDSON L. HAINES, Q.C., Toronto.

PART II

How an Action for Malpractice is Tried

The plaintiff commences his proceedings by having his lawyer issue a writ, which is served on the doctor. The lawyer acting for the doctor, or the doctor's insurer, enters an appearance. Next the plaintiff must serve a statement of claim, in which he sets forth clearly the alleged acts of malpractice, so that the doctor will know exactly what he is charged with. A statement of defence is filed on behalf of the doctor, to which the plaintiff may file a further document known as the "reply". These three documents are called the "pleadings", and they constitute the written record upon which the action will be tried.

Before trial there may be an "examination for discovery", which is a proceeding under oath before an officer of the court. Each party is entitled to ask the other about the facts on which he relies in establishing his cause of action or defence. In my opinion, this proceeding is invaluable in malpractice actions. It enables each party to know exactly what is being said about him, and the element of surprise at the trial is materially reduced.

In the province of Ontario, malpractice actions are tried by a judge alone. A doctor may be confident that our judges will try the case dispassionately and are not apt to be swayed by sympathy or prejudice. In some jurisdictions these types of case may be tried by jury and, not unnaturally, a doctor may fear what will happen before such a tribunal. It has been my experience that juries are exceedingly capable when the plaintiff and defendant are of equal status in their community. When the status is unequal, as in the action of a widow or poor person against a large corporation, we are apt to get some surprising results. And the same thing is true in the case of a horribly injured patient who is suing a prominent doctor; juries may not be able to see beyond the injury. Doctors with professional friends in the United States who have misgivings about the fairness of civil trials might remind them that malpractice cases are generally tried in the United States by juries, where the citizen has the constitutional right to trial by jury.

The Need for Expert Testimony

When a judge comes to try a malpractice action he will probably have no personal knowledge of the standard of care that should have been shown by the doctor. Before the judge can reach a decision, competent witnesses must appear before him and testify what ought to have been done in diagnosing the case and what treatment should have been given. With this evidence before him, the judge can inquire what was actually done by the defendant dentist and decide whe-

ther he has lived up to the required standard; he is able to make findings of fact on the diagnosis and treatment, and upon these findings he will reach a decision.

Without this evidence the judge is powerless to decide the case and must dismiss it. Faced with this possibility, a lawyer who cannot for one reason or another produce expert witnesses might attempt to make out his case upon the examination for discovery of the defendant doctor and by the use of textbooks. Anyone who has attempted to follow this road knows that it is very rough; the layman cannot grapple with the intricacies of medical science. Aristotle said, "As the physician ought to be judged by the physician, so ought men to be judged by their peers". This is particularly true in malpractice actions, and the courts are looking to the doctors to provide the necessary evidence to enable actions against doctors to be tried on the same footing as against any other professional man.

Before leaving this phase of malpractice actions, I should mention a small group of cases in which the plaintiff can usually make out his case without expert witnesses, although he may very well need them once the defence is developed before the court. Lawyers refer to this type of case as involving the doctrine of *res ipsa loquitur*. It is really a doctrine of common sense. It applies where the thing causing damage is shown to be under the management of the defendant or his servants, and the accident is such as in the ordinary course of things does not happen if those who have the management use proper care; it affords reasonable evidence, in the absence of explanation by the defendants, that the accident arose from want of care. Illustrations that suggest themselves are the removal of the wrong tooth or teeth, allowing a fragment of a tooth to pass into the lung during extraction, lacerating the patient's cheek or face with a drill or disc, burns from an X-ray machine, and an ever-expanding field of situations that make it apparent public opinion expects dentists to observe increasingly high standards. You can pretty well ascertain the situations for yourself by simply asking if it were another dentist who was involved, "Would I expect the other dentist to give an explanation and, in the absence of one, would I conclude he had bungled the job?"

The concluding portion will appear next month.

TABLE CLINICS — WINNIPEG, JUNE 23-26, 1957

We are gratified to have two-thirds of the clinics coming from across the country, New York on one hand and Vancouver on the other. A good balance has been obtained among the general practitioners and the specialties of orthodontics, oral surgery and paedodontics.

The Federal Department of Health, Provincial Department of Health and the R.C.D.C. have promised exhibits as well.

The dental nurses are also planning table clinics to be held in conjunction with the rest of the clinics.

It is felt that with thirty or more clinics, there should be a most interesting afternoon in store for everyone attending.

Dr. Stewart on the left receiving his award for 50 years' practice in Alberta. In the centre, Dr. H. D. Redding, (President of the Lethbridge & District Dental Society) and Dr. L. T. Allen is on the right.

THE PROVINCES

Alberta

Lethbridge and District Dental Society

The last meeting of the Lethbridge and District Dental Society was held in Lethbridge on February 7th. Program consisted of afternoon and evening clinics by Dr. Winston C. Bushell of Montreal. Subject: "Full Mouth Reconstruction" and "Anterior Tooth Injuries".

The meeting was highlighted by the presentation of an Alberta Dental Association plaque to Dr. J. S. Stewart of Lethbridge in recognition of 50 years' practice in Alberta. Dr. Stewart has actually practised in Alberta since 1902, and his Northwest Territories Certificate issued at that time was viewed with interest by all. He is still carrying on a full time general practice. The plaque was presented to Dr. Stewart by Dr. L. T. Allen of Lethbridge and close personal friend and past president of the Alberta Dental Association. (Brig. Gen. John Smith Stewart, D.D.S., C.M.G., D.S.O. 1901 — South Africa in the Boer War, First Great War 1914-1918, Alberta legislature for Lethbridge 1911 to 1925, House of Commons in Ottawa 1930-1935.)

The meeting and clinics were very well attended, with dentists travelling from all parts of southern Alberta to attend.

V. E. C.

Cleft Palate Seminar at the University of Alberta

On Saturday March 2nd the Faculty of Dentistry of the University of Alberta presented a most interesting and helpful seminar on the subject of Cleft Palate. The following members of the staff participated — Dr. C. R. Castaldi, "Morphology of clefts of lip, alveolar process and palate"; Dr. R. D. Haryett, Orthodontic approach to cleft palate rehabilitation"; and Dr. Sperry Fraser, "The role of the prosthodontist in cleft palate management."

Edmonton and District Dental Society

The regular meeting of the Edmonton and District Dental Society, which was held on February 5, featured Dr. W. C. Bushell, head of the Department of Prosthodontics, McGill University, as guest clinician.

During the afternoon Dr. Bushell spoke on "Mouth Reconstruction for the General Practitioner", illustrating a fine presentation with slides and models.

During the evening he spoke on "Treatment of Injuries to Teeth of Young People". His case histories were well illustrated with slides.

G. C.

British Columbia

Vancouver and District Dental Society

On February 5, 200 enthusiasts enjoyed this year's Home Talent Day which brought forth a high calibre of talent. Much credit is due to Dr. Dave Zack who was responsible for securing the clinicians, and to Dr. Leonard Gee who took care of the meticulous local arrangements.

Afternoon Chair Clinics

"A Technique for a Lower Impression"—Downtown Prosthodontia Study Club—Drs. P. Boyle and G. I. Creasy

"Class 2 Amalgam"—Dr. Basil Plumb

"A Hydrocolloid Bridge"—Drs. C. P. Johnson and N. C. Ferguson

"High Speed Cutting in Proximal Restorations" —Dr. K. E. Murchie

"Class 5 Gold Foil"—Ferrier Study Club—Dr. R. J. Stewart

"Remineralization" — Vancouver Paedodontia Study Club—Dr. C. W. Gardner

Evening Table Clinics

"Helpful Hints in Prosthetics"—Vancouver Denture Study Club

"A Treatment for Fractured Anterior Teeth"—Intercity Paedodontia Study Club—Drs. R. J. Gifford and W. J. Chambers

"The Why and How of Scaling and Home Care"—Vancouver Periodontia Study Club—Drs. S. B. Smordin, J. Gelmon, M. Panar, J. L. Fishman, J. Blumes, R. O. Croll

"X-ray Radiation and its Hazards"—Vancouver Oral Diagnosis Study Club—Dr. R. G. Dickson

"Orthodontic Hints for the General Practitioner"—Dr. K. M. Walley

"Advantages of Hydrocolloid Technique in Fixed Bridgework"—Dr. J. E. Balmer

"Is Your Practice Managing You?"—Dr. R. I. Yorsh

"Establishing Access to the Root Canal"—Vancouver Endodontia Study Club—Drs. S. Margolese, C. Ames, M. Krasnoff

"Temporary Plastic Crowns and Bridges"—Occlusal Correction and Reconstruction Study Club—Drs. C. W. Gardner, R. B. Telford

"Basic Concepts in Exodontia and Oral Surgery"—Dr. H. E. Simmons

"Endodontics and Apicoectomy"—Dr. F. W. Dyer

"Simplified Office Record Photography"—Dr. D. W. Findlay

D. H. M.

B.C. Dental Association

The Empress Hotel in Victoria with its old-world atmosphere will be the setting for the annual convention on May 16, 17 and 18. Plans are maturing, and Dr. Bill Milburn, the President, has announced that the two featured lecturers will be Dr. Sol Silverman, Jr., Professor of Dental Medicine, University of California, and Capt. Theodore Lesney, oral surgeon and Chief of Dental Service at the U.S. Naval Hospital, San Diego.

Campbell Studio

DR. WILLIAM MILBURN,
President, B.C. Dental Association.

Manitoba

Manitoba Dental Association

Dr. J. O. Brown of Winnipeg has been elected secretary-treasurer of the Manitoba Dental Association at the annual meeting at the Royal Alexandria Hotel. New members elected to the Board of Directors for a two-year term are Drs. John E. Abra and W. Ivan Jackson, both of Winnipeg, and W. E. Purdie of Brandon.

Executive officers with unexpired terms are Dr. T. J. Cooke, president, Winnipeg; Dr. W. P. Parrott, vice-president, Portage la Prairie; Dr. J. B. Rumberg, past president, Winnipeg.

Winnipeg Dental Society

This meeting was a joint meeting with The Manitoba Dental Association, and it was gratifying to see a good representation of out-of-town dentists in attendance.

Dr. Campbell opened the meeting with announcements — re the day's activities; then Dr. Averback introduced Dr. Walter McFall, of Ashville, North Carolina, the guest speaker for the day. Dr. Averback gave a very glowing resumé of some of Dr. McFall's activities both within the dental profession and in many other fields. Dr. McFall has an international reputation as a practising Paedodontist, a versatile clinician and an outstanding story-teller, and our Society was very fortunate in obtaining his services, particularly so as, due to his recent illness, he had had to cancel many speaking engagements.

Dr. McFall then took over the meeting and he certainly justified the introduction. He dealt with every aspect of dentistry for children, including modification of cavity preparations, the economic side, and how to handle the doting mother. He emphasized many of these things with amusing anecdotes of the incidents that had happened to him and his family over the years; he also emphasized them by speaking with a very real emotion about the wonderful satisfaction a person can obtain — both professionally and socially — by helping other people in every way.

The morning session was recessed at 12:30 for luncheon. The business meeting of the Society followed.

Members were asked to observe a one minute's silence in memory of the late Drs. Wallace and Kushnerov.

Visitors to the meeting were then introduced. These included: Dr. Hall, from Saskatchewan; Dr. Robertson, from Dauphin; Dr. Pierce, of Neepawa; Dr. Stockton, of Virden; Dr. Ollinik, of Morden; Dr. Adler from the Army and Dr. Stedman, a new member from Winnipeg.

Dr. Kasloff gave a report on the Telephone Course and gave Saturday, January 26th as the first meeting.

Dr. G. Campbell reported on a meeting held between a Society Committee and a committee of Aldermen and School Trustees — re the school dental situation. He said that nothing definite had been accomplished, but he felt that the city people had been given a proper insight into the situation from the profession's point of view.

Dr. Ivan Jackson then read a letter from the Community Chest Headquarters, con-

gratulating the profession on making over 100 per cent of its quota. Dr. Jackson thanked every one who had worked to accomplish this, and he recommended that a new chairman be appointed this Spring to handle next Fall's campaign.

Dr. McFall then took over again for the afternoon. Main points, according to his own summary, were:

1. Don't keep a child patient waiting more than 20 minutes.
2. Take children one after the other; don't alternate them with adults.
3. Know the patient's name, nickname, age, etc.
4. Have children come to the office early, regularly and often.
5. Talk to the child in his language—use models, charts and pictures.
6. Never embarrass the child before a third person.
7. Establish a routine and don't let anything disrupt it.
8. Try to make friends with—and be a booster of, every child patient.
9. Remember that dentistry is a profession and a business—and keep it that way.

As Dr. McFall so aptly put it, try to practise your profession so that when it comes time for you to go up yonder, even the mortician will be sorry to see you go.

Dr. G. Campbell suitably expressed the Society's thanks to Dr. McFall, and the resounding ovation from the members certainly must have indicated to Dr. McFall our appreciation of his efforts.

The Winnipeg Society meeting was followed by refreshments; then by the Annual Meeting of The Manitoba Dental Association.

J. P. B.

Ontario

Sudbury and District Dental Society

The following activities of the Sudbury and District Dental Society took place during January and February 1957.

A three-day seminar on hypnosis as applied to dentistry was attended by many local dental society members on Jan. 26, 27 and 28th. Dr. I. Sector of Chicago presented the series of lectures and demonstrations to ten local dentists and three physicians. This is the first time that Dr. Sector had presented the course of study in Canada.

The annual Sudbury and District Dental Society dinner and dance for wives, members and guests was held at the Legion Memorial Hall. Seventy wives, members and guests were present for the gay festivities. At this time, elections for the coming year were held. As the Society has increased in number during the past year, the outgoing suggested that the incoming executive be enlarged to three members.

The following is the executive for 1957-1958:—

President: Dr. G. Tokaryk. Vice President and President Elect: Dr. G. P. Copeland. Secretary-Treasurer: Dr. W. Cook.

G. P. C.

Lambton County Dental Society

The latest clinical instruction in the care of the young child patient was the highlight at a conference of the Lambton County Dental Society's fifth annual seminar. The purpose of the two-day refresher course was to bring new knowledge and clinical instruction to Sarnia's dentists by two outstanding clinicians. The clinicians were Dr. J. T. Crouch, Associate in Dentistry, Department of Orthodontics in the Faculty of Dentistry, University of Toronto, and Dr. C. D. Beierl, Associate in Dentistry, Department of Paedodontics, of the same faculty. Emphasis was on better dental care for children, preventive services, maintenance of normal dental health, better operative dentistry and child management. The seminar made use of lectures, table clinics and chairside demonstrations on child patients.

London and District Dental Society

The London and District Dental Society met Saturday February 10th at the Hotel London to hear Major Alex Roger of the R.C.D.C. school at Ottawa.

Using coloured slides Major Roger illustrated how periodic clinical and X-ray examinations often lead to the early diagnosis of cysts.

A comprehensive classification of cysts was well presented and the diagnosis and treatment of each was described.

It was announced that the dentists on the Dental Public Health and Public Relations Committee with the approval of the society have formed a rotating service roster on a trial basis. Persons presenting themselves for emergency dental treatment to the interns in the Out-Patients Department of the local hospitals after hours may now receive the benefit of dental consultation and treatment if required at any time.

D. E. W.

Dr. Stanley R. Moore Honoured

"I regard this occasion as a tribute to the triumph of mediocrity." With these words did Dr. Stanley R. Moore, displaying those traits of modesty, humility, and graciousness which have so characterized his life, accept the many tributes which were lavished upon him by his friends and colleagues at a Testimonial Dinner. The dinner

was arranged by the Executive of the London and District Dental Society to honour Dr. Moore, a long-time friend of the Society and of Dentistry who has recently retired from active practice after forty-seven years as a general practitioner. Over sixty Society members and friends attended the dinner, including members of the immediate family of Dr. Moore. These included two sons, Dr. John Moore of Mitchell, Mr. Robert Moore, Detroit, Michigan, a son-in-law, Mr. Peter Little, of Toronto, and a brother, Dr. S. A. Moore of London.

A toast to Dr. Moore, on behalf of the local Society, was proposed "by proxy" by Dr. Earl Fuller, close friend and associate of Dr. Moore for many years, who was in Florida at this particular time but sent a telegram of good wishes to the "paragon of wit and wisdom of the London Dental Society." This message was read to the meeting and presented to Dr. Moore by Chairman Dr. A. J. Harris, President of the Society, who added his personal greetings on behalf of the group.

Representing the Board of Governors, Canadian Dental Association, Dr. C. L. Strachan of London referred to Dr. Moore and others like him as the backbone of Dentistry, men who have carried the banner for Dentistry over the years, who have always maintained the highest standards of service and who have earned from their patients a keen appreciation of these services and a sincere devotion for their kindly human interest in each individual. Dr. Strachan recalled serving on the local Society executive under the presidency of Dr. Moore, who holds the rare distinction of serving the Society as President for two different terms.

Dr. J. M. Boyd of Stratford, President, Ontario Dental Association, brought greetings from this body and reminded the meeting that it is because of the conduct of men such as Dr. Moore that Dentistry holds an enviable position among the healing professions of our day.

Dr. W. J. Dunn, Secretary, Royal College of Dental Surgeons of Ontario, extended to Dr. Moore the best wishes of that organization and the personal regrets of the District Board Member, Dr. Murray Campbell of Chatham, at his inability to attend because of ill health.

Dr. Harley Mason, Vice-President of the London Society, presented to Dr. Moore a Life Membership in the Society, after which Dr. J. A. Reynolds presented an engraved Silver Tray and outlined some of the highlights of Dr. Moore's life, not the least of which was the winning of the wrestling championship, 130 pound class, during his college days. Dr. Moore was born in Belleville, graduated from the Royal College of

Dr. Harley Mason, Vice-President of the London and District Dental Society presents an Honorary Life Membership to Dr. Stanley R. Moore.

Dental Surgeons in 1909 and has practised continually since that time in London. He has been very active in the Masonic Lodge, the Scottish Rite, and various musical organizations. As a family man he can boast of a very charming wife, one daughter, two sons and eight grandchildren.

In replying, Dr. Moore recalled the days when the harmony and cordiality of 1957 was not so evident among the members of the profession in London and he paid tribute to the men who over the years have provided a unifying influence in the Society. He traced the growth of the Society from its infancy and then outlined his own wonderful philosophy of life, a philosophy which enabled him to lay down the mirror and probe with very few regrets and to look forward with anticipation to his years of retirement.

Dr. Moore has sometimes been described as the "walkingest" man in London, notorious for his daily half-hour walk to and from the office, complete with pipe, and since his retirement he has often been spotted prowling the township concessions. It is the earnest hope of his every friend that he may take many more such walks and may be spared to enjoy, in the company of his good wife, many years of a well-earned retirement.

J. A. G.

Thunder Bay Dental Association

The Thunder Bay Dental Association held its annual meeting and election of officers recently. Elected were:

Past President: Dr. W. Kostyshyn; Vice-president: Dr. J. Siren; Secretary-Treasurer: Dr. J. Stitt.

Representatives on hand from sister professions were Dr. A. Porter, Thunder Bay Medical Society; D. Manore, Pharmaceutical Association, Lawyer W. Maloney; Architecture, W. Kyro, and from the Engineering Institute, E. Manchul.

Kingston and District Dental Society

The Kingston and District Dental Society held its February meeting on Wednesday, February 6th, National Dental Health Day. The speaker was Dr. Wesley J. Dunn, Registrar of the R.C.D.S., and Editor of the J.C.D.A. Dr. Edward E. Johns of Kingston, who is chairman of the Public Relations Committee of the Board of Governors of the O.D.A., also addressed the meeting. A very forthright presentation on public relations in dentistry was given.

Thirty dentists from Kingston and district were present with Dr. Harvey Campbell, the president of the society, in charge of the meeting. Dr. Murray Purcell of Pembroke paid his official visit as representative of this district on the board of the R.C.D.S. of Ontario.

The following day Dr. Dunn took part in two radio interviews and one television appearance with Dr. Robert E. Feasby, the Director of the Dental Health Division of the Public Health Department of the City of Kingston. At noon Dr. Dunn addressed some ninety members of the Rotary Club of Kingston on the Dental Health Problem. His speeches and comments over radio and television provided an excellent means of focussing public attention on dental health.

R. E. F.

Ottawa Dental Society

Children should have their teeth examined when they are from three-and-a-half to four years old, Dr. Gordon W. Johnston, Faculty of Dentistry, University of Toronto, told members of the Ottawa Dental Society at a meeting held recently.

President William Bryce presided and the speaker was introduced by Dr. Bruce Squires and thanked by Dr. Howard Young.

At an afternoon session, Dr. Johnston dealt with children's dentistry and in the evening his topic was dentistry in general.

Quebec

Montreal Dental Club

The monthly dinner meeting of the Montreal Dental Club was held in the Spanish room of the Queen's Hotel on Thursday, Feb. 21st. Dr. E. Toby Cleveland presided.

Following the reading of the minutes by the club Secretary, Dr. Cleveland announced that Dr. J. S. Dohan had recently been elected President of the American Academy of Restorative Dentistry in Chicago. A more complete account of the honour will appear outside this article.

Dr. G. M. Dundass was then congratulated by the president on the splendid work he has done for the McGill Alumni, and Dr. J. E. VanVliet expressed his thanks, through a letter read by Dr. Cleveland, for the contributions to the Red Cross Campaign, and urged an even stronger participation this year.

Dr. M. A. Rogers introduced the guest speaker, Dr. E. R. Epp, physicist in the department of radiology at the Montreal General Hospital. Dr. Epp spoke informatively on the discovery and development of radiation, the role it has played in man's quest for knowledge and advancement, and the harmful effects on our health when exposed to excess.

As applied to dentistry, Dr. Epp said that harmful pathological effects from X-radiation were very light, provided basic precautions are taken. These precautions he listed as —

1. length of time of radiation
2. protection through adequate casing of the X-ray machine head
3. proximity of the dentist to the patient at the time of exposure. A distance of five feet is essential
4. direction of the beam — stand well behind the machine head
5. control of milliamperage and voltage
6. filtration — at least 1½ mm. of aluminum in the beam to cut out useless and scattered beams
7. use of a cone

Dr. Epp emphasized that the biological process most sensitive to radiation was the inheritance mechanism, but that the "safe genetic radiation dose" was unknown. Much research is needed, he stated, in this field.

Dr. R. McMahon, on behalf of the club, thanked the speaker.

W. D. S.

The Annual Winter Meet of the Montreal Dental Club was held at the Chantecler Hotel, nestled in the snow-clad hills of the Laurentian resort town of St. Adele en Haut. Members of the Club began arriving on Friday, February 1st to enjoy the three days of winter festivities.

In all, about 25 members participated — some capitalizing on favourable skiing conditions, others enjoying the curling facilities, while still others merely relaxed in

the pleasant surroundings bereft of the city's noisy hustle and bustle.

To many it was a novel experience to watch skiers display their skill on the "hickories" only a few feet from where they splashed in the warm water of the swimming pool, being separated from them only by the windowed walls of the pool.

A Saturday evening cocktail party overlooking the curling rink afforded the members a wonderful opportunity of knowing each other better, and full advantage was taken of it.

Hearty meals, roomy, comfortable accommodation, pleasant companionship, and the choice of winter activities in an ideal setting have left those who participated eagerly looking forward to next year's outing.

W. D. S.

Dr. Thorburn Cleveland was elected president of the Montreal Dental Club at the annual dinner held recently in the Queen's Hotel.

Other officers elected were: Dr. A. T. Donahue, honorary president; Dr. R. F. Harvey, president-elect; Dr. R. A. Lefebvre, secretary; Dr. A. E. Pye, treasurer; Dr. C. C. Bourne, historian archivist.

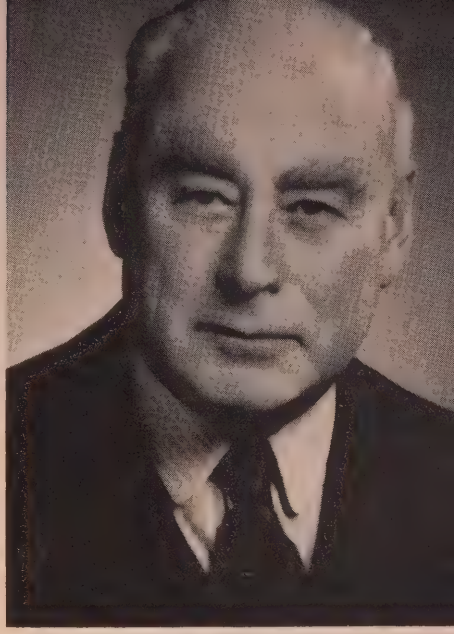
Dr. Owen Fredericks, Dr. M. Hebert and Dr. D. Henry were elected directors for two years, while Dr. R. Ryan, Dr. S. Smaill and Dr. W. Swiston will complete their term of office.

The following were made honorary members after completing 35 years of practice: Dr. Earl Laurin, Dr. G. S. Veith, Dr. Neil Blacklock, Dr. George Hale and Dr. Douglas Crowe.

Dr. J. S. Dohan Heads U.S. Dental Group

Dr. John S. Dohan of Montreal was elected President of the American Academy of Restorative Dentistry at the Academy's annual meeting in Chicago in February. Dr. Dohan is the first Canadian to be chosen President of the Academy, whose members are a good cross-section of the dentists throughout the United States.

A graduate of McGill University, he joined the Montreal Dental Club in 1908, and became a member of the executive in 1909; after holding the offices of Secretary and Vice-President, he assumed the Presidency in 1912. In the years 1920-21, he held the office of President of the College of Dental Surgeons of the province of Quebec. In 1933 he was elected a member of the American Academy of Restorative Dentistry. In 1935 he was elected a Fellow of the American College of Dentists (FACD). In 1939 he became a member of the Pierre Fauchard Academy. From 1910 to 1946 he was a member of the teaching staff of McGill



Nakash

DR. JOHN S. DOHAN, Montreal
President—American Academy of Restorative Dentistry.

University, and for some years was chairman of the department of Prosthodontics.

Over a period of years Dr. Dohan has "cliniced" far and wide throughout North America. This latest recognition of his outstanding service to dentistry will be welcomed by dentists on both sides of the border. The members of the dental profession, in Montreal in particular, wish to express their congratulations and best wishes.

A. J. S.

Laurentian Dental Society

At the February meeting of the Laurentian Dental Society, Dr. Paul Dionne gave a very informative talk on Hypnodontics.

Medical hypnosis, he states, is in great use in Britain and also in the U.S.

Hypnodontics render priceless services to dentist and patient alike, by abolishing fear, tension, and generally relaxing the latter. The flow of saliva, nausea and haemorrhage, in overly nervous patients, are also controlled surprisingly well.

Dr. Dionne completed his most interesting talk by giving practical demonstrations on patients.

E. M.

Alpha Omega Dental Fraternity

On Tuesday evening, January 22, 1957, members and guests of the Montreal Chapter of Alpha Omega Fraternity held a

dinner at Lindy's Restaurant in Montreal, followed by a scientific session.

Three clinicians presented papers. Dr. I. Feinchneider discussed the merits of the Ionophoresis apparatus, explaining its mode of action and comparing it with other methods of endodontic treatment. He stressed that it was not a cure-all, but did have a place in treatment of otherwise inaccessible canals.

Dr. Mervin Gornitsky, an oral surgeon, discussed Flaps. Dr. Gornitsky placed emphasis on proper size for access, blood supply for the flap, suturing and the use of drains. It was his opinion that root resection in the upper posterior quadrants was, at best, hazardous, stating that one oro-antral fistula negates 100 successful resections.

Dr. Chas. Solomon who practises orthodontics discussed "Minor Orthodontic Tooth Movement For the G.P." Simple acrylic and stainless steel appliances were described, together with their method of construction.

The clinicians were thanked by Dr. Mac Golderberg on behalf of a very appreciative audience.

G. S.

Mount Royal Dental Society

Minutes of meeting of Mount Royal Dental Society held at the Mount Royal Hotel on Friday, January 18th: The speaker, Dr. Michael S. Matson of Balston Spa, N.Y., whose topic was "Immediate Dentures", was introduced by Dr. A. W. Bazerman.

He pointed out that the basic advantages are: 1) patient not edentulous during healing; 2) Appearance not severely affected; 3) Patient will not procrastinate in removing infected teeth; 4) Supporting structures better maintained; 5) Less discomfort; 6) Supporting structures have more stability and greater tissue resiliency; 7) There is improved natural esthetics.

He traced the history of dentures from the earliest to the latest type of tissue duplicating denture pioneered by Dr. Earl Pound of California.

He discussed the psychological concept of dentures and advised that we restore the patient's concept of "body image" to him. That is, try to restore what the patient's mouth looked like, felt like and functioned like when he had his own teeth. The patient will then experience no difficulty in accepting the dentures.

The laboratory technique was then outlined from the impression to the making of casts for surgery, to the setting of the teeth on the model and the duplication of the tissue surfaces in wax, through to the investing, coloring, staining and curing of the denture.

Maintenance of the finished appliance includes rebasing after six weeks and then after six months to one year.

The afternoon session dealt with "Surgery for Immediate Dentures." Dr. Matson advocates the making of two sets of dentures when the teeth are to be removed and to reline one set six months later. This obviates the necessity of any interruption in denture wearing for the patient at that stage. At the time of removal of the teeth, hospitalization of the patient was advocated. Emphasis was placed on obtaining the service of a fully qualified anaesthetist if possible. The actual alveolectomy technique was illustrated at each step, with incisions being made at the gingival margins and distal to the cuspids.

It is important to measure the amount of alveolar bone to be removed for the alveolectomy and to measure from the incisal edge of the teeth.

The number of sutures should be minimized and the use of antihistamines was advocated to reduce surgical post-operative swelling.

The lecture was well illustrated with many coloured slides.

G. S.

Saskatchewan

Dr. L. J. D. Fasken Retires

Dr. Fasken, an outstanding member of the Dental profession of Canada, retired from active service at the end of last year.

He graduated from the R.C.D.S. in Toronto in 1905 and settled that year in the city of Regina, Sask., where he has remained ever since. Arriving as he did, so shortly after the formation of the province, he was largely instrumental in the development of the Provincial Dental Act. He was the first and only Secretary-Registrar of the province until his retirement.

Dr. Fasken, or Fax, as he was so widely known, was a true friend to every member of the profession. He was one who gave all he possessed for the members of the profession. He will always be remembered for his intense interest in the welfare of new members. He was always a gentleman of the highest order, an honest, gracious man with an unusual dry humor and a repertoire of stories. He was possibly at his best when entertaining dentists in his home. However, we all will remember him as the highlight at conventions. He was one who loved to be with his confreres, he gave a lot to life and was one who got a lot out of life.

He made an outstanding contribution to Dentistry. He served several years on the executive of the W.C.D.S. and was then honoured by serving as President of that

Society. He was awarded the Fellowship in the American College of Dentists. At the time of the joint meeting of the C.D.A. and W.C.D.S. at Saskatoon in 1949 he was highly honoured by having his oil portrait unveiled and presented to the University of Saskatchewan.

To the grandest member of the profession in Saskatchewan, we all owe a great debt of gratitude and extend a very sincere wish for God's blessings in the future.

L. D. H.

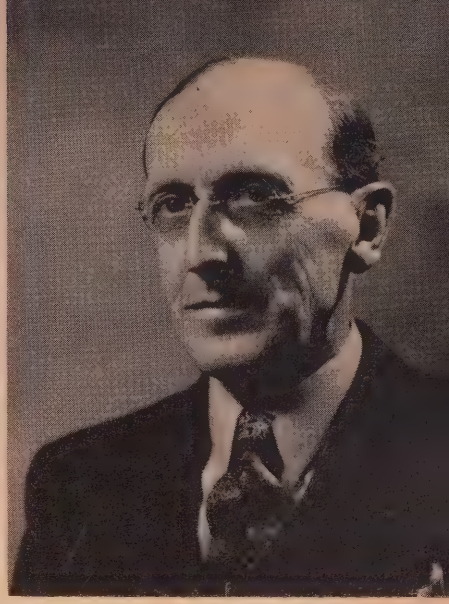
The President and Secretary of the C.D.A. Visit Saskatchewan

President Dr. Ken Johnson and Secretary Dr. Don Gullett of the Canadian Dental Association have completed their tour and visitation of the Dental Societies across Canada. This visit has grown to be of utmost value to the profession. It has instilled a spirit of unity to the profession, has provided an education to the members at large, has inspired the entire membership by the excellent leadership these gentlemen are providing. They have presented very clearly the challenges confronting us today and in the future. We are indeed fortunate to have executive officers with such a keen insight into the problems, and who are capable of providing proper direction to the line of action to follow.

President Dr. Ken Johnson chose as his subject address "Organized Dentistry", in which he referred to the necessity of protection for the Public and the Profession. He solicited our efforts for better dentistry and better service.

Secretary Dr. Don Gullett spoke particularly to the younger men in the profession and urged them to accept the challenges and responsibilities of a dentist as an educator in the schools, and the need to provide leadership. He referred to the pressure for auxiliary services, the lack of teaching facilities, the widening ratio of population to dentist, the socio-economic changes and the influences from outside the profession. He pointed out how unskilled and skilled labour with greatly increased financial returns are creating a demand for more services, for some plan of health services, and that the profession must be prepared to assist in producing a satisfactory solution.

It is to be regretted that all the members of the dental profession cannot hear these men each year.



DR. L. J. D. FASKEN

INTERNESHIPS AVAILABLE

Junior interneships in dentistry are being offered in the Montreal General Hospital, The Montreal Children's Hospital and the Royal Victoria Hospital.

A Resident Interneship in Oral Surgery is also available.

Address enquiries to: **MISS K. OLIVER, Secretary, Faculty of Dentistry McGill University, Montreal, P.Q.**

GENERAL NEWS

New State Dental Practice Law Enacted in Tennessee

Gov. Frank Clement of Tennessee on Feb. 15 signed a new state Dental Practice Act which stresses the adjunctive relationship between the dental profession and the dental laboratory craft. The new law stipulates that dental laboratory technicians may construct prosthetic dental appliances "only on the direction, prescription or order" of a licensed dentist. Passage of the law climaxed efforts of the Tennessee State Dental Association for a new statute to replace a 1935 law. The new law sets out a system of penalties, including a $100 to $400 fine for first offenders and at least $1,000 and a possible prison sentence of not less than a year for second offenders. Additionally, individuals who violate injunctions barring them from practising dentistry are faced wth a mandatory prison sentence of not less than a year and a fine of not less than $1,000. Work orders are now required by Dental Practice Acts in 36 states. In 27 states and the District of Columbia, the law provides for written authorizations.

ONTARIO DENTAL ASSOCIATION CONVENTION

ROYAL YORK HOTEL, TORONTO — MAY 12-15, 1957

Essayists:

Dr. George C. Paffenbarger, Senior Research Associate of the American Dental Association at the National Bureau of Standards, Washington.
"The Present Status of Silicate Cements and Direct Filling Resins."

Dr. Lee Roy Main, Dean, School of Dentistry, Saint Louis University.
"The Roentgen Ray and its Contribution in Conserving Human Dentition."

Dr. Louis I. Grossman, Professor of Oral Medicine, School of Dentistry, University of Pennsylvania.
"The Place of Endodontics in Everyday Practice."

Dr. Robert J. Nelsen, Rockville, Md. (formerly with the National Bureau of Standards).
"Rational Rotory Instrumentation."

Group Clinicians:

Dr. Lee Roy Main — *"Interpretation vs Diagnosis."*
Dr. Louis I. Grossman — *"A Simplified Technique of Endodontic Practice."*
Dr. Bernard A. Sussman, New York City — *"The Insertion of the Full Denture made Easier."*
Dr. Robert J. Nelsen — *"Operation of the Hydraulic Turbine Handpiece."*
Dr. George C. Paffenbarger — *"Technique of Handling Silicate Cement and Direct Filling Resins."*
Dr. James Purves, Toronto — *"Trouble Shooting in Crown and Bridge."*
Dr. Alan E. Hobden, Toronto — *"Exodontia."*
Dr. Wm. G. McIntosh, Toronto — *"A Method of Occlusal Adjustment by Grinding."*
Dr. Jack A. Marshall, Belleville — *"Amalgam — the Backbone of Preventive Dentistry."*
Dr. Frank Martin, Toronto — *"Operative Procedures in Crown and Bridge Prosthesis."*
Dr. Wilfrid D. Clark, Hamilton — *"Full Dentures — New Techniques in Aesthetics."*

Royal Canadian Dental Corps:

Major I. G. Craigie — *"The Newer Concepts of Cavity Preparation."*
Major G. C. Evans — *"Approved Methods of Rebasing Cast Partial Dentures."*

Dental Public Health Committee:

Dr. M. C. Johnston, Toronto —
Miss M. Hamlen, Toronto — } *"The Role of the Dentist in Orthodontic and Speech Problems."*

THE CORPS

Major P. S. Sills has been designated Special Staff Officer for the United Nations Emergency Force in Egypt. As such he is dental adviser to the Commander U.N.E.F. and responsible for the co-ordination of dental services within the Force. The following resumé of dental services is quoted from a report recently received from Major Sills:

"There are five dental detachments servicing U.N.E.F. personnel at the present time. The Canadian Detachment consisting of two clinical sub-sections is located at Base and is responsible for treatment for approximately 1100 personnel. In addition, it is supplying emergency treatment for personnel of other contingents without dental facilities.

"The Norwegian detachment of one sub-section is located with the Norwegian Field Hospital at El Arish. This detachment has been rendering treatment for the Danish Battalion and for the Norwegian personnel.

"The Colombian, Swedish and Yugoslav detachments are each one sub-section in strength and are located with their respective contingents at El Arish. The Colombian dental officer is hampered by the lack of suitable field equipment but steps are being taken to remedy this situation. The R.C.D.C. is the only detachment equipped to supply laboratory service."

The following amusing paragraph shows the ingenuity of Corps personnel. The dispatch is datelined Abu Suweir.

"A dentist's drill is unnerving enough for most people but there was an added mental hazard in the early days of the Canadian field dental detachment here. When the dental officer stepped on his foot pedal to feed power to his equipment, six 100-watt bulbs suddenly blazed on like a photographer's flash. The bulbs and a series of wires made up the Rube Goldberg-like improvisation that served to reduce current until a proper transformer could be flown out from Canada."

Brigadier E. M. Wansbrough attended the meetings of the Associate Committee on Dental Research in Ottawa, March 4-5, 1957.

Lt.-Col. T. L. Marsh of the Directorate recently attended a one-week course at the Canadian Civil Defence College, Arnprior, Ont.

IN MEMORIAM

Arthur P. Daly — Dr. Arthur P. Daly died recently in a Saskatoon hospital, at the age of 66.

Dr. Daly was born at Iona, P.E.I., and educated at St. Dunstan's College and Prince of Wales College at Charlottetown, P.E.I. He graduated in dentistry from the University of Toronto and immediately following graduation opened a practice at Radisson, where with the exception of two years in the Royal Canadian Army Dental Corps in the Second World War, he has since resided.

He was a member of the Knight of Columbus fourth degree.

Dr. Daly is survived by his widow, Katherine, one son, Dr. A. J. Daly, Kindersley, one sister, Mrs. Catherine Connolly, Iona; and three brothers, James, Iona; Dr. Joseph, Toronto; and Edward, Vancouver, B.C.

John Silknitter — Dr. John Silknitter, 67, who formerly practised dentistry in Moose Jaw, died in Enumclaw, Washington, recently.

He was an active member of the Kiwanis club in Moose Jaw before leaving for the United States.

John Mansfield Hughton — Dr. John Mansfield Hughton of Hamilton, Ontario, died recently at his home. Dr. Hughton practised for many years in Hamilton and retired some years ago.

Dr. Hughton's wife, Bessie, pre-deceased him in 1955; surviving is his daughter, Mrs. Mary E. Russell.

Albert Edward Cummings — Dr. Albert Edward Cummings, 90, died on February 20, 1957, at St. Joseph's Hospital, Hamilton, Ontario.

Born in Bondhead, Dr. Cummings taught school near Alliston. He graduated from the University of Toronto in 1897 and practised in Thornbury until his retirement in 1949.

Dr. Cummings was a member of Thornbury Board of Education for more than 40 years, a Rotarian, an elder of the United Church, and for many years an ardent curler.

His wife, Charlotte, predeceased him. Surviving are a son, Dr. E. Arthur Cummings of Toronto, a daughter, Mrs. G. B. Dale of Burlington, and five grandchildren.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba	June 23rd-26th
1958	Montreal, Quebec	Oct. 5th-8th
1959	Halifax, Nova Scotia	June 21st-24th
1960	Ottawa, Ontario	———

FUTURE EVENTS

Date	*Function*	*Location*	*Officer*	*Address*
May 12-15	Ontario Dental Assoc. Convention	Toronto, Ont.	Mrs. R. E. Booker	234 St. George St., Toronto 5, Ont.
May 13	3T7 Class Reunion Banquet	Royal York Hotel	Dr. G. A. Cowan	Box 58, Hespeler, Ontario
May 16-18	British Columbia Dental Assoc. Convention	Empress Hotel, Victoria, B.C.	Dr. Ross Upton	Exec.-Secretary, 217 Medical-Dental Bldg, Vancouver 1, B.C.
May 29-June 1	American Academy of Dental Medicine Annual Meeting	Hotel Sheraton Plaza, Boston, Mass.	Dr. R. Diamond	100 Boylston St., Boston, Mass.
June 10, 11, 12, 1957	Maritime Dental Convention	Moncton, N.B.	Dr. G. Cormier	120 Queen St., Moncton, N.B.
Aug. 3-4, 1957	Fifth Annual Roentgenology Workshop	Vancouver, B.C.	Dr. O. F. Wright	Secretary-Treas., 4014, Cambie St., Vancouver, B.C.
Aug. 19-22	Pacific Coast Dental Conference	San Diego, California	Dr. C. W. Gilman, Secretary	219 E. 8th Street, National City, California.
Aug. 28-2nd Sept., 1957	European Orthodontic Society Meeting	Geneva, Switzerland	Prof. E. Fernex	1 Place du Port, Genève, Suisse.
Sept. 7-14	Congrès de la Fédération Dentaire Internationale	Rome, Italy		Canadian Dental Assoc., 234 St. George St., Toronto.

SHORT GRADUATE COURSE

DENTAL ORAL SURGERY AND ANAESTHESIA

April 29-May 3 1957 **Enrolment Limit 12**

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fracture of the jaws, cysts root resections, abnormal frena, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee $100.00

For further information and application forms address inquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto, Ontario.

Volume 23
Numéro 4
Avril 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Croissance et développement

par CLAUDE BARIL, B.A., D.D.S., Montréal

Le dentiste, et plus particulièrement l'orthodontiste, pour solutionner les problèmes occasionnés par les troubles de la croissance, se doit de connaître au moins les rudiments de l'élaboration de la croissance, les facteurs qui la dirigent et les stades de la calcification.

La croissance s'étend jusque vers la vingt-cinquième année et se caractérise par la prédominance de la formation sur la destruction. Ce phénomène, de même que celui de la morphogénèse des os, dépend de certains facteurs endogènes, exogènes et locaux. Le développement s'accomplit selon un rythme déterminé. Toute altération subie dans l'un des facteurs énumérés plus haut amène un changement plus ou moins grave qu'un dentiste averti peut facilement déceler. Selon le degré de son esprit clinique, son patient sera traité plus ou moins à temps et les malformations en puissance passeront-elles inaperçues.

Le développement utérin dure neuf mois. L'union des pronucléi males et femelles crée la coalescence des gènes qui déterminent l'hérédité, qui a pris son essor pendant la conception. Les traits transmis par les ancêtres ne peuvent alors être changés. Nous avons, dans cette phase du développement:

1—La formation du cartilage de Meckel, autour duquel se forment les maxillaires inférieurs, vers la sixième semaine. L'ossification de la mandibule se fait plus tôt que les autres os du corps, mais à la naissance, elle est encore divisée et les deux parties ne se souderont, au niveau de la symphyse, que vers le deux ou troisième mois. L'angle goniaque est à peu près inexistant à la naissance, mais s'accentuant avec l'âge, l'angle formé par la rencontre du plan mandibulaire avec le plan de Frankfort ne doit tout de même pas dépasser trente degrés.

2—Les maxillaires supérieurs se forment autour de cinq centres d'ossification qui se réunissent vers le sixième mois de la vie intra-utérine; ils sont toutefois très peu développés à la naissance. Ils s'accroîssent par apposition au niveau de la suture inter-maxillaire pour ce qui est du sens transversal; antéro-postérieurement, ils se développent un peu incisivement mais surtout dans la région molaire et palato-maxillaire. Dans le sens vertical, l'accroissement se fait au niveau de la partie nasale mais surtout alvéolaire.

3—Le défaut de coalescence des bour-

geons des maxillaires provoque les fissures naso-palatines, les becs-de-lièvre uniques ou bilatéraux.

4—La calcification initiale du bord incisif temporaire vers le cinquième mois; de la canine, de la face occlusale de la première molaire temporaire, vers le sixième, et de la dent de six ans, vers le septième. Les couronnes des dents temporaires sont formées dans les semaines qui suivent la naissance.

5—A la naissance, les maxillaires contiennent vingt-quatre sacs dentaires (follicules) dont vingt de dents temporaires et quatre des dents de six ans.[1]

A partir de la naissance, le développement ne se fait pas à un rythme régulier; certaines poussées sont rapides et d'autres plus lentes. Les poussées rapides correspondent d'assez près aux périodes d'évolution dentaire. D'après Todd, la croissance rapide se groupe en quatre grandes phases:

1—De la naissance à sept mois: c'est la période de croissance la plus rapide de la vie.

2—De quatre à sept ans: c'est la deuxième période rapide.

3—De onze à treize ans: la troisième.

4—De seize à dix-neuf ans: c'est la quatrième période rapide.

La nécessité de la croissance la plus rapide de la naissance jusqu'au septième mois s'explique par les faits de la formation complète des couronnes de toutes les dents temporaires. La croissance rapide est donc nécessaire pour faciliter les mouvements des follicules dans les maxillaires pendant la première année.

A la naissance, la mandibule se trouve dans la position distale, et elle doit subir un mouvement antérieur pendant l'allaitement normal qui stimule le développement de la branche montante, des condyles et de l'articulation temporomandibulaire. Grâce à ce processus, les incisives supérieures et inférieures trouveront une occlusion normale.[2] Cette fonction de l'allaitement du nourisson joue un rôle prémordial dans le développement de la mandibule en sa position avancée, en empêchant la formation des malocclusions, genre classe deux.

La croissance verticale des dents temporaires se poursuit graduellement avec la formation des racines. La formation de la racine de l'incisive est complétée vers un an et demi et celle des canines et molaires vers la quatrième année. Le procès alvéolaire s'accroit avec l'allongement de la racine; ce phénomène favorise l'accroissement de volume des maxillaires de deux à quatre ans, dans le sens vertical.

Vers la deuxième année, apparaissent les bourgeons des prémolaires permanentes et, vers la troisième année, ceux des deuxièmes molaires permanentes. La dentition temporaire se complète dans l'année qui suit. Les molaires et canines temporaires occupent, sur l'arcade, un espace formé pour leurs remplaçantes, les prémolaires et canines permanentes. La couronne de la première molaire permanente est formée vers le huitième mois après la naissance et elle se place spontanément en arrière de la deuxième molaire temporaire. Elle apparait vers six ans, mais ses racines ne seront complétées que vers dix ans.

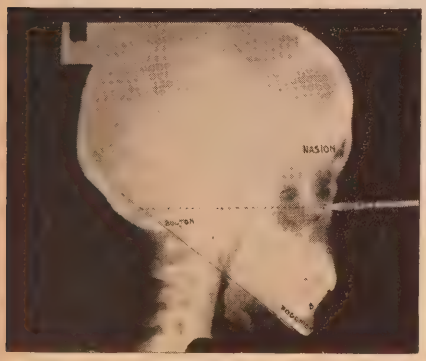
La deuxième période de croissance rapide, selon Todd, se situe de quatre à sept ans et elle est liée à la croissance et à l'alignement des couronnes des incisives et canines permanentes. Les follicules entassés commencent leur migration éruptive en gagnant leur position respective. Ces couronnes, étant plus larges que les couronnes temporaires, nécessitent plus d'espace, et, partant, la croissance doit se poursuivre pour les accomoder. Il est intéressant de noter, qu'à six ans, les maxillaires contiennent plus de dents et de follicules qu'à n'importe qu'elle période de la vie. Il y en a, au total, quarante-huit, dont vingt dents temporaires en fonction et vingt-huit follicules permanents en pleine évolution. Ce nombre décroîtra au fur et à mesure du remplacement des dents temporaires par les permanentes. L'incisive centrale supérieure fait son éruption entre sept et huit ans, et, subséquemment, la latérale, entre huit et neuf et la première prémolaire entre neuf et dix ans. La formation des racines des incisives centrales est complétée, vers

onze ans et celle des latérales et [illegible] molaires, vers douze ans. Enfin, les bourgeons de la dent de sagesse commencent à se former vers huit ans.

La troisième période se poursuit de onze à treize ans. Cette croissance se manifeste distalement à la première molaire permanente afin d'assurer assez d'os de support pour l'éruption de la deuxième molaire. La canine fait son éruption vers onze ans et la formation de sa racine sera complétée vers seize ans. La deuxième molaire permanente fait son éruption vers douze ans et sa racine est complète vers seize ans.

La dernière période de croissance est de seize à dix-neuf ans et son objectif est d'assurer assez d'espace à l'éruption de la troisième molaire. Cette période varie beaucoup et la dent de sagesse peut faire son éruption jusqu'à vingt-cinq ans.[3]

L'étude du développement de la face et du crâne dans la période postnatale implique l'étude radiographique qui se fait grâce à certains points et plans de repère indiqués ci-après:



N—nasion: il correspond à la suture naso-frontale
O—orbital: rebord orbitaire inférieur, partie la plus déclive
A—le point médian le plus interne du maxillaire supérieur
B—le point médian le plus interne de la mandibule
Po—pogonion: le point le plus saillant du menton
Por—porion: bord supérieur du canal auditif, sur la ligne médiane
Bol—bolton: le point le plus supérieur, postérieur à l'apophyse mastoide.

Le plan horizontal idéal d'orientation est le plan de Frankfort, passant à sa partie postérieure par le porion et joignant l'orbital dans sa partie antérieure.

Plan facial: joint le point N au point Po.

Plan mandibulaire: tangente au bord inférieur de la mandibule.

Plan occlusal: il suit la ligne d'occlusion des dents; dans les cas de courbe de Spie prononcée, il passe par la centrale et la dernière molaire.

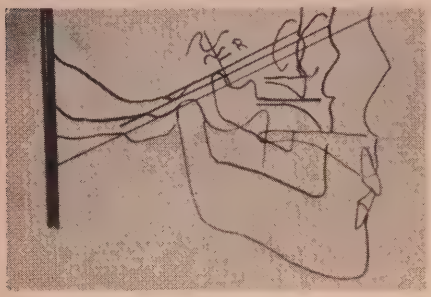
La croissance de la face et du crâne est un phénomène assez complexe et c'est Broadbent qui, en 1931, mit au point la technique la plus objective pour accomplir cette étude. Il étudia le développement de plus de trois milles enfants qu'il faisait revenir périodiquement au Bolton Center de Cleveland. Il put ainsi faire une étude comparative avec assez d'objectivité de la progression du développement chez l'homme. Prenons deux radiographies du crâne d'un enfant à un an d'intervale en reproduisant les mêmes conditions de prise de radiographie (appareil de Broadbent). Selon la précision de la technique, les conclusions seront plus ou moins justes.

Traçons sur chacune des radiographies le plan Bolton-Nasion. De ce plan, élevons une perpendiculaire au centre de la selle turcique. Le point R est le milieu de la perpendiculaire.

Pour étudier le développement qui se produisit entre les deux prises de radiographies, superposons les deux points R des radios et faisons en sorte que les plans Bolton-Naison soient parallèles. Nous pouvons alors comparer et étudier le développement de la face et du crâne sur une période de temps X d'une manière assez objective.

Voici ce qui ressort de cette étude. Le crâne et la face ont des rythmes de croissance totalement différents. A la naissance le volume du crâne est sept fois celui de la face, tandis qu'à l'âge adulte il n'atteint que deux fois celui de la face. Le cerveau à sept ans a atteint les trois-quart de son volume, tandis que c'est

l'âge où la face commence à se développer rapidement. Il résulte de tout ceci que le milieu de la tête varie avec l'âge.



Le milieu se trouvant au centre du front à la naissance, il passe au niveau de l'arcade sourcillière à six ans pour se retrouver à la ligne interpupillaire chez l'adulte. Le développement du crâne proprement dit est en rapport direct avec le développement cérébral. Le cerveau passe de 370 grammes à la naissance à 1360 grammes à l'âge de six ans pour se stabiliser vers l'âge de vingt ans à 1400 grammes environ.[4]

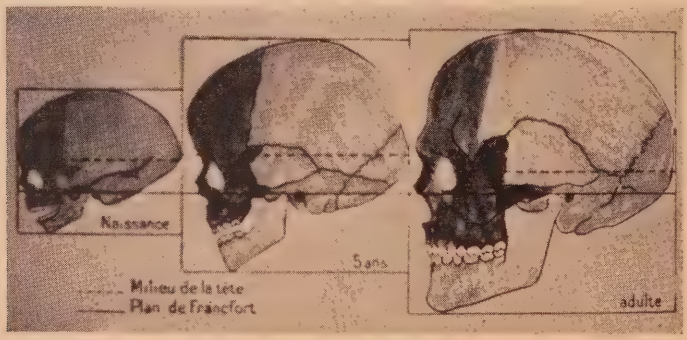
Le développement facial se fait comme pour le reste du corps, par apposition osseuse en surface et au niveau des lignes de suture. Comme nous l'avons vu précédemment, le développement est continu, mais avec des phases plus ou moins rapides. Pour ce qui est de la morphogénèse des os, elle s'accomplit grâce à certains facteurs mécaniques, tels la pression et la traction, ainsi qu'aux facteurs hormoniques des glandes endocrines qui agissent dans le modelage des os. Cependant, les différents plans, antéro-postérieur, transversal, et vertical ne se développent pas également.

Croissance antéro-postérieure: dans la région orbito-nasale, le développement s'accomplit surtout au niveau des cavités aériennes. Les centres d'ossification sont la suture sphéno-ethmoïdale, la suture sphéno-occipitale, la région temporo-maxillaire et la suture temporo-molaire.

Pour ce qui est du maxillaire supérieur, il se développe surtout dans la région ptérégo-maxillaire et molaire, quoique l'on retrouve une légère ossification dans la région incisive. On ne doit tout de même pas compter sur l'ossification antérieure pour qu'elle crée de la place pour les antérieures permanentes, après neuf ou dix ans. Au contraire, on remarque une légère diminution de la distance nente comparée la dentition permanente comparée à la dentition temporaire.

Dans la région maxillo-inférieure, l'angle goniaque et la symphye mentonnière se partagent le développement antéro-postérieur avec encore une fois prédominance postérieure.[5]

Croissance verticale: la croissance verticale est la plus imposante, puisque la face passe d'une hauteur de 35 mm., à la naissance, à une hauteur d'environ 115 mm., à l'âge de vingt ans. Les centres d'ossification sont les régions naso-orbitales et sinusales pour les plus impor-



tantes. Il y a toutefois un développement de moindre importance au niveau de alvéoles supérieures et inférieures, ainsi qu'au niveau du condyle, de la branche montante et de la partie inférieure du corps de la mandibule.

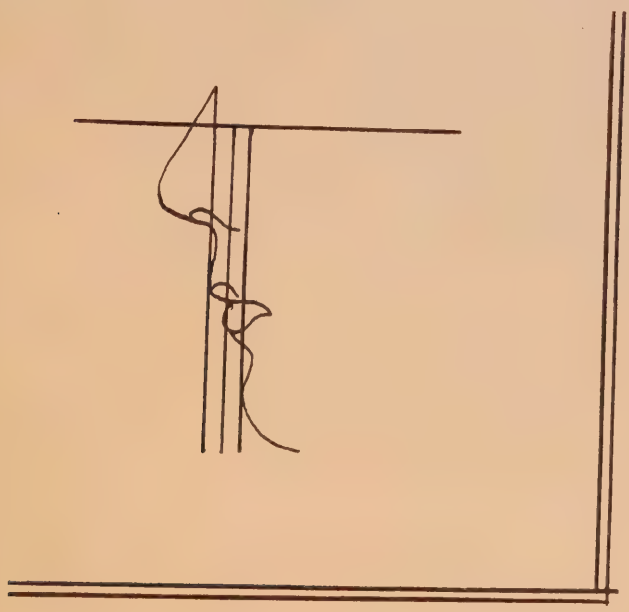
Croissance transversale: la croissance transversale est beaucoup plus forte dans la région maxillaire que dans la région orbito-nasale, de même qu'elle est plus importante dans la région molaire que dans la zône incisive. C'est à la partie postérieure de la face que la croissance transversale est maxima, en haut, au niveau de apophyses zygomatiques et, en bas, au niveau de l'angle goniaque.[6]

Rappelons que le tissus osseux est d'origine conjonctive, c'est-à-dire formé d'un treillis de fibres collogènes et capable de fixer des sels calcaires. Ce sont précisément ces sels qui différencient le tissu conjonctif de l'os et qui donneront à ce dernier sa rigidité. Le squelette est avant tout un tissu de soutien, mais il est en même temps la plus grande réserve calcique de l'organisme: il contient 99% du calcium d'un individu. L'enfant puise le calcium nécessaire à l'édification de son squelette chez sa mère pendant sa vie foetale et dans sa nourriture, après sa naissance. Ceci montre l'importance de l'alimentation chez la mère pendant sa grossesse. Les facteurs qui règlent les apports en sels minéraux sont les suivants:

Exogènes: L'alimentation nous apportera les sels de calcium, de phosphore, de potassium et de magnésium. Elle ajoutera les vitamines A, B, et C, qui aident à la fixation de ces sels dans l'organisme et qui de plus agissent sur la croissance.

La lumière, c'est-à-dire le soleil, agira par l'intermédiaire des rayons ultraviolets. Ces rayons sont l'adjuvent des vitamines dans la réalisation de leur rôle dans l'organisme et ils suppléront, même souvent, à un manque de vitamines.

Enfin les amino acides, (tryptophane,



zystine, etc.) sont aussi apportés par l'alimentation.

Endogènes: le système neuro-végétatif, c'est-à-dire le vague et le sympatique règlent par leur action le métabolisme des tissus. Les glandes endocrines, par ailleurs, ont une action régulatrice importante pour la croissance. Le thymus, la thyroide, l'hypophyse et la rate ont une action accélératrice et aident à la fixation du calcium et du phosphore dans l'organisme, tandis que les parathyroïdes occasionnent un gaspillage de calcium et que les testicules et les ovaires retardent la croissance.[7]

Chacun de ces facteurs a son importance dans le développement normal de la face et du crâne; une déficience quelconque dans ce domaine entraîne une malformation ou un trouble dans le développment dentaire et facial.

Par exemple, l'angle formé par la rencontre du plan mandibulaire et du plan de Frankfort est très précieux dans le pronostic d'un traitement.

En effet, l'ouverture de cet angle à un degré plus grand que trente doit nous laisser sceptique quand au résultat parfait d'un traitement orthodontique, car la malocclusion n'a pas alors une étiologie strictement dentaire mais bien osseuse; on ne peut en orthodontie absolument rien changer à cet angle.

De même, la protrusion faciale peut avoir deux causes: si le profil est avancé parce que les dents seules sont avancées, le traitement redonnera à l'individu son profil normal. Mais si, au contraire, le plan, qui relie les points A et B, est en avant du plan facial, même si les dents reprennent une inclinaison normale, le profil restera en protrusion, car c'est l'os basal qui est trop avancé et nous ne pouvons agir sur cet os. Dès lors, le profil normal ne peut être obtenu. Dans un profil normal, toute la partie labiale et mentonnière doit être comprise entre deux lignes, perpendiculaires au plan de Frankfort, l'une partant du naison et l'autre de l'orbitale:[8]

La principale considération préventive consistera dans le maintien de la longueur totale de l'arcade dentaire temporaire jusqu'au moment de son remplacement par l'arcade permanente. La première molaire définitive, en faisant son éruption en arrière de la deuxième molaire temporaire, doit être maintenue dans cette position jusqu'au moment du remplacement de toutes les dents temporaires par les dents permanentes, c'est-à-dire vers douze ans. Ce facteur constitue la base de l'occlusion normale de la dentition permanente. Si l'arcade temporaire n'est pas maintenue dans cette position, la première molaire permanente subit un déplacement mésial; il y a perte d'espace, un ralentissement du développement postérieur et, par conséquent, un manque d'espace pour l'éruption normale des autres dents permanentes. Comme résultat, une malocclusion s'installe et le traitement orthodontique devient nécessaire.

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(6) Izard—"Orthodontie," Masson & Cie, 1943, p. 32.
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5757 Decelles

ÉDITORIAL

Tendance des sciences dentaires

Les sciences dentaires sont à un tournant de leur évolution. Au cours des derniers vingt-cinq ans, les progrès de la dentisterie ont porté surtout sur les techniques, les matériaux et l'instrumentation. C'est que les dernières décades ont exploré plus à fond les secrets de la chimie et de la physique. Et la chirurgie dentaire étant, comme la médecine et les autres disciplines appliquées, un prolongement pratique les sciences de base subit nécessairement l'influence des recherches et des conceptions qui leur sont imprimées par les circonstances ou les personnages en cause.

L'accent est maintenant mis sur la biologie. Cytologie, génétique, physiologie, endocrinologie, histologie sont à l'ordre du jour et on est à la veille d'assister à des progrès considérables dans ces sciences.

Ceux qui se tiennent au courant de la littérature scientifique au sens large du mot se rendent compte, comme on le prédisait depuis longtemps, que, dans le monde entier, la biologie prend un essor extraordinaire. Grâce à l'amélioration des moyens d'investigation et grâce aussi aux potentiels illimités qu'ont révélé les premiers essais tentés dans ces domaines, les biologistes sont à mettre à jour des données scientifiques qui auront une répercussion considérable sur les sciences dentaires. Les modifications que l'avancement de la physique et de la chimie ont apportées à l'exercice dentaire se sont produites graduellement, sans révolution et sans heurt. Mais il n'en sera peut-être pas de même pour les applications biologiques; car l'avance scientifique s'effectue avec une rapidité déconcertante. Les penseurs du domaine dentaire ne cessent de dire que l'avenir de la dentisterie est intimement lié aux sciences biologiques. Notre profession aura fort à faire pour marcher de pair avec ces progrès rapides, pour choisir les concepts nouveaux qui aient des rapports avec elle et pour y trouver des applications susceptibles de l'aider. C'est dire que les découvertes qui seront faites en biologie vont modifier profondément l'enseignement et influencer à la longue l'exercice de notre art. Il faut que notre profession sache s'adapter très vite à ces nouvelles révélations de la connaissance humaine; autrement, il se peut qu'un concours de circonstances ébranle considérablement la position qu'occupe aujourd'hui la dentisterie comme discipline de santé.

Il faut à tout prix que nous maintenions notre rang dans le domaine scientifique, surtout dans les sciences biologiques. Jusqu'à maintenant, le gros du travail du dentiste a consisté à réparer les dégats causés par la carie dentaire; l'apport du praticien dentaire, comme celui du praticien médical, a eu un caractère négatif, en ce sens que ces thérapeutes ont soigné des maladies et minimisé leurs effets. Et comme conséquence—surtout pour le dentiste l'attention des chercheurs a porté sur l'aspect mécanique de la profession. On peut dire sans beaucoup se tromper que les techniques dentaires ont atteint leur summum de perfection et que l'avenir n'apportera pas de changements radicaux dans ce domaine.

L'attitude du dentiste de demain envers ses patients sera toute différente de celle affichée par le dentiste contemporain. Les développements des sciences biologiques et les progrès des mesures prophylactiques déplaceront ses problèmes pour les porter sur un autre plan.

Ceux qui élaborent les programmes d'enseignement et ceux qui font des règlements pour diriger l'exercice dentaire doivent songer à ces modifications qui ne manqueront pas de se produire dans les sciences dentaire. Il faut préparer et guider la nouvelle génération de dentistes pour qu'elle puisse s'adapter à cette nouvelle situation.

GERARD DE MONTIGNY

Journées dentaires internationales de Paris

Les 31èmes JOURNEES DENTAIRES INTERNATIONALES DE PARIS se tiendront du 25 novembre au 1er décembre 1957, à la Maison de la Chimie, 28bis, rue St-Dominique, Paris.

Fidèles à une longue tradition qui permet à ce grand Congrès international de se dérouler dans une ambiance amicale, les membres du Comité d'Organisation, présidé par Monsieur R. Dubois-Prévost, Professeur à l'Ecole Dentaire de Paris, ont prévu un ensemble de manifestations scientifiques, culturelles et artistiques qui assureront le succès habituel de ces Journées.

La partie scientifique du Congrès comportera:

1°—les séances données dans le grand amphithéâtre de la Maison de la Chimie, où les conférenciers présenteront des sujets groupés suivant leurs spécialités; un service de traduction simultanée en plusieurs langues permettra aux auditeurs français ou étrangers de suivre les exposés et les discussions.

2°—des tables-cliniques qui disposeront chacune, cette année, d'un emplacement isolé pour qu'une vingtaine de confrères puisse suivre, après inscription préalable, et confortablement, chaque présentation.

3°—un programme de cinéma documentaire.

Une exposition réunira une sélection de nos fournisseurs, fabricants et laboratoires, particulièrement désireux d'aider à l'épanouissement de nos manifestations.

Quant au programme de nos visites culturelles et de nos festivités, les projets les plus instructifs et attrayants se concrétiseront dans les mois à venir et seront annoncés dans le programme provisoire.

Nos confrères, désireux de présenter des communications, des tables-cliniques ou des films, sont priés de s'inscrire dès que possible auprès du Secrétaire Général: Robert IBOS, 14, Avenue Gabriel Péri, Antony (Seine), à qui toute correspondance concernant le Congrès doit être adressée.

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Nouvelles de l'Association

Mémoire présenté au Ministre des Finances sur la déduction possible de l'impôt sur le revenu de montants payés pour une pension (par le président et le secrétaire de l'Association, le 28 janvier 1957).

Honorable ministre,

1) *Entrée en matière*

Nous savons que cette question vous a déjà été exposée par d'autres organismes à différentes reprises et nous désirons vous rappeler que notre Association vous a déjà soumis un mémoire à ce sujet le 27 octobre 1955. Il nous semble que ce problème prend de plus en plus d'importance non seulement pour des groupes de professionnels, mais aussi pour toutes les classes de la population.

2) *Décision en Angleterre*

Le principe à la base du projet que renferme ce rapport n'est pas nouveau (voir le deuxième chapitre du Report of the Committee on the Taxation Treatment of Provisions for Retirement, tel que proposé par le chancelier de l'Echiquier à la Chambre des Communes anglaises, en février 1954). Soulignons que sur la recommandation du comité Tucker, le parlement anglais, au cours de la dernière session, a adopté une loi autorisant la déduction du revenu imposable des sommes versées à un fonds de retraite par les individus travaillant à leur compte et cela à certaines conditions. De plus, cette loi permet aux personnes plus agées de consacrer à leur fonds de retraite des montants plus considérables et de les soustraire de leur revenu, en considération de leur âge plus avancé.

3) *Projet*

Nous proposons donc:

a) Qu'on amende la loi de l'Impôt sur le Revenu de façon à ce qu'elle permette la déduction de sommes consacrées à un fonds de pension, et cela à des conditions raisonnables.

b) Qu'on permette à des membres plus agés d'augmenter les montants qu'ils consacrent à leur plan de retraite en proportion de leur âge.

Pour simplifier l'administration d'un tel mécanisme, nous suggérons que le gouvernement reconnaisse les plans de pension qui seraient mis en force pour leurs membres par des organismes officiels, tels que l'Association dentaire canadienne. Cette acceptation officielle éliminerait du même coup les complications que susciterait le fonctionnement de plans particuliers de pension. Le gouvernement n'aurait qu'à approuver qu'un petit nombre de plans qu'adopteraient les associations en faveur de leurs membres uniquement.

4) *On ne demande pas de privilège*

Ce mémoire ne sollicite pas de privilège particulier, puisque d'autres groupements d'individus jouissent déjà des avantages énumérés ici. De plus, ces professionnels, qui travaillent sur une base de salaire, peuvent, d'après les termes de la loi, déduire de leur revenus l'argent qu'ils contribuent à un fonds de pension. Il nous semble raisonnable qu'on alloue les mêmes avantages à ceux qui, par leur initiative personnelle et avec leurs seuls moyens, se constituent une réserve pour leurs vieux jours. On ne demande pas une exemption d'impôt; on propose tout simplement de reporter à plus tard l'impôt sur cette portion du revenu qui est mise de coté pour l'époque de la vieillesse.

5) *Circonstances spécifiques de la profession dentaire*

I—Aspect économique

Le dentiste canadien éprouve beaucoup de difficulté à se trouver un revenu au cours de sa vieillesse. Et ces revenus devraient être en rapport avec le standard de vie qu'il s'est donné durant les années les plus productives de sa vie. Si ce but était atteint, non seulement l'individu en tirerait du profit, mais toute notre économie s'en ressentirait. Le dentiste a beaucoup de misère à se donner un revenu convenable dans les dernières années de sa vie. On peut résumer ainsi ses difficultés:

a) il commence sa carrière professionnelle assez tard après avoir consacré de six à huit ans à des études pré-professionnelles ou professionnelles pour se qualifier pour une licence. Ainsi ce n'est que passé de beaucoup vingt ans qu'il peut se consacrer à l'exercice dentaire et commencer à gagner un revenu. Ces années de préparation coûtent cher et il entre en clientèle probablement avec des dettes.

b) Avant de se mettre à pratiquer après sa graduation, il doit dépenser un fort montant d'argent pour équipper son bureau. Ce montant se chiffre entre sept et huit milles dollars.

c) Au moment où il a payé ses dettes, il arrive à l'époque de ses plus gros revenus. C'est aussi la période où il contracte les plus

fortes obligations pour une famille qui grossit. Il doit faire instruire ses enfants et assumer des responsabilités pécuniaires en rapport avec son foyer et sa famille.

d) Les années où le dentiste touche ses plus gros revenus sont comparativement brèves. On peut relater l'existence économique d'un dentiste canadien en consultant les statistiques pour l'année 1953 indiquées dans le Relevé sur l'Economie de l'Exercice dentaire entrepris par l'Association dentaire canadienne.

Moyenne des revenus nets des dentistes en rapport avec l'âge

Age	Moyenne du revenu net
Vide	5,478.00
25-29	6,297.00
30-34	7,901.00
35-39	9,272.00
40-44	8,694.00
45-49	8,431.00
50-54	8,344.00
55-59	7,120.00
60-64	6,286.00
65-69	4,597.00
70-74	3,553.00
75-	2,519.00

e) Une analyse de ce cycle de revenus, comparée aux responsabilités pécuniaires du dentiste et au système actuel de taxation, montre qu'il lui est difficile de se constituer un fonds de retraite pour ses vieux jours.

II—Le recrutement des dentistes

La profession cherche à se recruter de nouveaux membres en se basant sur les services dentaires dont a besoin le public; mais, d'un autre coté, elle réalise que le système actuel des impôts est de nature à faire choisir aux jeunes gens d'autres carrières. Même quand l'étudiant n'est pas bien au courant des questions fiscales, d'autres qui peuvent influencer son choix (son père, ses parents et d'autres personnes plus agées) connaissent le rendement pécuniaire d'une profession et se chargent de le diriger vers des activités où les facteurs fiscaux sont moins onéreux.

6) *Conclusion*

Nous croyons sincèrement que cette question peut influencer gravement l'avenir de notre profession. Le professionnel doit sentir qu'il est traité avec justice par l'impôt et tel n'est pas le cas aujourd'hui. Nous espérons que vous étudierez sérieusement ce problème.

Kenneth M. Johnson, président
Don W. Gullett, secrétaire

Loi no 47

Loi pour constituer un Conseil du Canada pour l'encouragement des arts, des humanités et des sciences sociales.

Selon les termes de cete loi, le Conseil est constitué pour administrer cent millions de dollars provenant du gouvernement fédéral. Le Ministre des Finances donnera au Conseil deux montants distincts de cinquante millions de dollars. L'un de ces octrois prendra la forme d'un fonds de fiducie dont le Conseil se servira à sa discrétion. L'autre sera appelé "Le fonds des octrois capitaux à l'usage des universités". Les membres du Conseil n'ont pas encore été nommés. Les octrois provenant du fonds capital seront distribués au cours des dix prochaines années et seront en rapport avec le nombre de la population de chaque province. On espérait que le Conseil, à l'aide de cet argent, pourrait aider les facultés professionnelles, mais les termes de la loi restreignent son effet seulement aux arts, aux humanités et aux sciences sociales.

Au cours des débats de la Chambre, M. Hees, député de Toronto-Broadview, a soulevé la question d'aide aux facultés de génie, de médecine et de dentisterie. Le premier Ministre a conseillé à M. Hees de ne pas se leurrer de fausses impressions.

La Fondation Kellogg donne près de $200,000 aux organisations dentaires du Canada.

Le rapport annuel de la Fondation Kellogg, qui vient d'être publié, montre que cette fondation a donné $191,971 aux organisations dentaires du Canada. Ces octrois se lisent comme suit:

Association dentaire canadienne

Pour aider le Conseil d'Enseignement dentaire à établir un système d'accréditation et d'échanges entre les facultés dentaires canadiennes	$ 6,155
Pour favoriser la formation du personnel enseignant des facultés dentaires canadiennes au moyen de conférences tenues dans les divers centres du pays	$ 3,150

Bourses d'études

Université Dalhousie	$ 4,001
Université McGill	$ 6,665
Pour améliorer le rendement des facultés dentaires canadiennes en renforcissant leur programme d'enseignement au niveau régulier et post-scolaire grâce à une meilleure formation pédagogique	
Université Dalhousie	$172,000
Pour agrandir la faculté et augmenter les disponibilités d'enseignement prédentaire et dentaire dans la région des provinces maritimes.	

De ces montants, $23,057 ont été versés durant l'année 1955-56.

Le docteur Ratté, ancien président, démissionne comme gouverneur

Le docteur Gustave Ratté vient de démissionner comme membre du Bureau des Gouverneurs, après 11 ans de service. Il fut président de l'Association durant l'année 1952-53. Durant plusieurs années, il a fait partie de divers comités et continue à travailler au bénéfice de l'Association. Le docteur Rémy Langlois lui succède au Bureau des Gouverneurs. Le docteur L. I. Duffy de Charlottetown a aussi démisionné du Bureau, où il est remplacé par le docteur A. W. Allan.

La ville de Fort Smith adopte la fluoruration

Le Conseil des Territoires du Nord-Ouest a approuvé l'adoption de la fluoruration de la ville de Fort Smith qui compte 800 habitants. La fluoruration a été proposée par un officier de la santé de cette ville et a été secondé par le gouvernement fédéral. La ville de Fort Smith est située un peu au nord de la ligne de démarcation qui divise les territoires du Nord-Ouest et la province d'Alberta et elle est, à date, la municipalité la plus au nord du Canada à utiliser cette mesure de santé publique.

La justice des Etats-Unis et la fluoruration

Au cours de l'histoire des Etats-Unis, les cours de justice ont joué un grand rôle dans le façonnement de l'opinion publique et dans l'évolution des méthodes administratives. Dans tout ce qui touche au grand public, la santé a peut-être été le domaine qui a ressenti le plus l'influence des décisions judiciaires. Il ne faut donc pas s'étonner qu'encore une fois l'opinion des juges prépare la voie rapidement et sûrement à l'adoption de la fluoruration comme mesure d'hygiène publique.

M. James A. Tobey a rendu récemment un grand service à la population en résumant le statut actuel de l'opinion des cours au sujet de cette mesure des plus controversées. On trouve l'esprit de ses recherches dans le premier paragraphe de son étude, qui se lit comme suit:

"La fluoruration bien faite de l'eau de consommation ne lèse en rien les droits constitutionnels des citoyens. La jurisprudence américaine a reconnu le bien-fondé de ce principe.

"Entre 1953 et la fin de 1955, la Cour Suprême des Etats-Unis et les cours de dernière instance de certains Etats ont statué que cette mesure constitue l'exercice d'un droit valide et raisonnable de la part des gouvernants dans l'intérêt de la santé publique et qu'elle ne viole aucun droit des individus, qui leur est octroyé par la constitution du pays ou des différents Etats."

Les cours de justice se sont toutes prononcées unanimement sur la question; et cette attitude est d'autant plus surprenante que le nombre des recours a été considérable et qu'on ait invoqué contre elle toutes sortes de raisons, religieuses, politiques, pseudo-scientifiques, etc. D'un autre coté, les façons d'attaquer cette mesure avaient toutes le même esprit et parfois l'opposition était menée par des groupements nationaux bien argentés. Dans toutes les causes, les savants juges ont rejeté les objections et reconnu cette mesure comme étant bénéficiable au bien-être de la population.

Depuis la première cause du genre qui a été plaidée en 1952, les cours de San Diego, Baltimore, Northampton, Fargo, Chehalis, Cleveland, Tulsa, Bend, Greenville, et Milwaukee se sont prononcées en faveur de la fluoruration. A Shreveport, une injonction contre la fluoruration a par la suite été renversée par la cour Suprême de la Louisiane.

En général, Tobey fait remarquer que les cours ont clairement déclaré que la question de fluoruration a une grande importance et qu'elle rend service à tous les citoyens; "Cette mesure n'est pas arbitraire, n'est pas illogique, elle ne constitue pas une médication, ni un changement, ni une législation pour une seule classe de la population et qu'elle n'est pas une violation de la liberté religieuse."

Tobey, qui est un expert des lois qui ont trait à la santé publique et qui est l'auteur de textes qui font autorité dans ce domaine, ajoute ce commentaire qui a beaucoup de portée: "Partout où l'exercice ou l'exercice sous de fausses représentations de droits reconnus en faveur de la liberté religieuse sont venus en conflit avec des lois ou des coutumes de santé publique, qui par ailleurs sont basées sur des textes clairs de la constitution, la santé publique a toujours gagné son point et, d'après la nature des choses, doit toujours avoir le pas sur l'autre. La fluoruration de l'eau des aqueducs est maintenant non seulement une mesure acceptée et basée sur des donnés scientifiques certaines, mais elle est sanctionnée par les lois de ce pays."

Editorial-American Journal of Public Health
livraison de décembre 1956.

Moyen d'abaisser le coût de la fluoruration

Le U.S. Public Health Service a annoncé le mois dernier qu'il a mis au point un nouvel appareil qui abaisse les frais nécessaires à l'addition de fluor à l'eau de consommation.

Le coût par tête, qui est actuellement d'environ 10 sous par année, sera réduit à 3 sous.

Le nouvel appareil permet d'utiliser le fluor lourd qui est la forme la moins coû-

teuse du fluor. Cet appareil a été mis au point par deux chercheurs du service de santé publique, M. F. S. Maier, directeur du service du génie sanitaire et M. Ervin Bellack, chimiste. Un rapport du résultat de leurs recherches est paru dans la livraison de janvier du Journal of the American Water Works Association.

Ce nouveau dispositif n'est pas encore sur le marché, mais sa confection sera commencée sous peu par l'industrie privée.

Municipalités qui utilisent le flour pour leur eau

(au ler janvier 1957)

Municipalités	Date du Début	Population
Terre-Neuve		
aucune		
Ile-du-Prince-Edouard		
aucune		
Nouvelle-Ecosse		
Halifax	juin 11/56	90,871
Dartmouth	juillet 3/56	20,004
Kentville	fév. 16/56	4,840
Nouveau-Brunswick		
aucune		
Québec		
Point Claire	fév. 3/55	15,067
Sillery	oct. 19/55	13,800
Ontario		
Brantford	juin 20/45	51,557
Brockville	fév. 18/56	15,000
Deep River	déc. 9/52	3,000
Fort Erié	jan. 18/52	8,567
Oshawa	fév. 26/53	50,136
Sudbury	Août. 29/52	60,000
Thorold	fév. 12/52	8,001
Tisdale Township	oct. 3/55	8,000
Manitoba		
Brandon	mars 8/55	24,579
Winnipeg	déc. 28/56	409,687
Saskatchewan		
Assiniboia	mai 1953	2,500
Moose Jaw	décembre 1952	29,282
Saskatoon	juillet 1955	70,843
Swift Current	octobre 1954	10,468
Weyburn	mars 1955	7,616
Wynyard	août 1956	1,492
Alberta		
aucune		
Colombie-Britannique		
Kelowna	sept. 15/56	8,924
Prince George	sept. 13/56	12,500
Smithers	juin 21/55	1,936
TOTAL		928,665

Nombre de dentistes aux Etats-Unis

L'Association dentaire américaine vient de publier des statistiques qui indiquent qu'il y a 97,529 dentistes aux Etats-Unis. De ce nombre, 90,239 sont au service du public et 7,290 dans les forces armées, les services de santé publique ou dans l'administration des affaires des vétérans. Environ 87,000 sont en service profesionnel et le solde, à leur retraite. On calcule qu'il y a un dentiste pour 1,669 personnes aux Etats-Unis.

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Remarques au sujet des statistiques annuelles sur le nombre des dentistes canadiens pour l'année 1957.

En se basant sur les chiffres de la population tels qu'établis au 1er juin 1956, on note dans le tableau no I que la proportion des dentistes par rapport à la population est de 1 par 2934. Il y a un ans, cette proportion était de 1 par 2881.

Selon des chiffres fournis par le Bureau des Statistiques du Dominion le 15 février 1957, la population du Canada s'établissait à 16,344,000 au 1er janvier 1957, soit une augmentation de 263,000 sur les chiffres du 1er juin. En se basant sur ces calculs, la proportion des dentistes en rapport avec la population serait d'un par 2980, au 1er janvier.

Ces statistiques montrent que la population augmente rapidement et que la proportion du nombre des dentistes en rapport avec les habitants du pays s'aggrave. On ne peut espérer d'amélioration à cette situation jusqu'à ce que le nombre des diplômés de nos facultés dentaires augmente substantiellement. Il faudra encore plusieurs années avant que l'expansion des disponibilités d'enseignement actuellement en cours produisent en fait un plus grand nombre de diplômés. Entretemps, on ne peut se tromper en disant que la proportion des dentistes en rapport avec la population ira en s'aggravant.

Le pourcentage de la diminution du nombre des dentistes à cause de décès a augmenté depuis quelques années et il s'établit comme suit:

	diminution pour cause de décès
1952	1.03%
1953	1.07%
1954	1.19%
1955	1.26%
1956	1.46%

TABLEAU I

CHIFFRES STATISTIQUES AU SUJET DU NOMBRE DES DENTISTES AU CANADA

(tels que rapportés par les registraires provinciaux en janvier 1957)

	Nombre de dentistes rapporté			Durant 1956				Augmentation ou diminution totale 1938*	Proportion du nombre des dentistes en rapport avec le chiffre de la population
Province	Hommes	Femmes	Totaux	Morts	Retraites	Additions	Déménagés		
T.-N.	36	3	39	0	0	5	3	+20	1/10643
I-du-P.-E.	34	0	34	0	0	1	0	+4	1/2920
N.-E.	190	3	193	5	5	11	6	+24	1/3600
N.-B.	124	1	125	1	1	3	1	+15	1/4437
P. Qué.	1308	6	1314	11	10	41	2	+437	1/3522
Ont.	2262	35	2297	35	14	91	10	+365	1/2353
Man.	262	1	263	6	3	2	0	+9	1/3232
Sask.	206	2	208	6	2	7	10	—7	1/4234
Alta	389	7	396	8	1	24	4	+159	1/2836
C.B.	605	7	612	8	5	20	3	+244	1/2285
Total	5416	65	5481	80	41	205	39	+1270	1/2934

Les chiffres des populations utilisés sont ceux publiés par le Bureau Fédéral de la Statistique pour juin 1956.

*Les chiffres des augmentations ou des diminutions comparés à ceux de l'année d'avant-guerre 1938 sont alignés pour fins de comparaison.

TABLEAU II

MIGRATION DES DENTISTES CANADIENS DURANT 1956

à:	T.-N.	I.-du-P.E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alta	C.B.	E.-U.	Angleterre	Europe	Total
de: T.-N.	–	0	0	0	0	1	0	0	0	0	0	2	0	3
I.-du-P.E.	0	–	0	0	0	0	0	0	0	0	0	0	0	0
N.-E.	1	0	–	0	0	2	0	0	0	1	1	1	0	6
N.-B.	0	0	1	–	0	0	0	0	0	0	0	0	0	1
P. Qué.	0	0	0	0	–	0	0	0	1	0	0	1	0	2
Ont.	0	0	0	0	0	–	1	0	0	2	5	1	1	10
Man.	0	0	0	0	0	0	–	0	0	0	0	0	0	0
Sask.	0	0	0	0	0	5	2	–	2	1	0	0	0	10
Alta	0	0	0	0	0	0	1	1	–	2	0	0	0	4
C.B.	0	0	0	0	0	0	0	0	2	–	1	0	0	3
Total	1	0	1	0	0	8	4	1	5	6	7	5	1	39

TABLEAU III

NOMBRE DE SPECIALISTES, PAR PROVINCE

(Seuls les dentistes, qui consacrent tout leur temps à l'exercice de leur spécialité.)

	T.-N.	I.-du-P.-E.	N.-S.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alta	C.B.	Total
Orthodontie	0	0	2	1	13	44	3	2	4	8	77
Chirurgie (Exodontie)	0	0	0	0	6	31	5	0	4	7	53
Périodontie	0	0	0	0	3	13	1	0	1	2	20
Pédodontie	0	0	0	0	0	5	1	0	0	7	13
Total	0	0	2	1	22	93	10	2	9	24	163

TABLEAU IV

NOMBRE DE DENTISTES EMPLOYES DANS LES SERVICES DE SANTE, DANS LES PROVINCES

en janvier 1957

	T.-N.	I.-du-P.-E.	N.-E.	N.-B.	P. Qué.	Ont.	Man.	Sask.	Alta	C.B.	Total
Ecoles dentaires: (Personnel enseignant)											
Plein-temps	0	0	3	0	12	11	0	0	4	0	30
Demi-temps	0	0	0	0	10	10	0	0	23	0	43
Service hospitalier:											
Plein-temps	1	0	3	2	0	19	3	0	4	7	39
Demi-temps	0	0	0	1	0	6	0	0	0	2	9
Service scolaire:											
Plein-temps	1	0	1	1	15	27	0	1	5	19	70
Demi-temps	3	0	3	2	6	55	4	1	5	2	81
Service d'Hygiène publique:											
Plein-temps	1	2	2	1	8	20	1	8	1	4	48
Demi-temps	0	0	0	0	12	0	0	0	0	0	12
Total	6	2	12	7	63	148	8	10	42	34	332

TABLEAU V

NOMBRE TOTAL DES DENTISTES EMPLOYES PAR LE GOUVERNEMENT FEDERAL
plein-temps en janvier 1957

Ministère des Affaires des Vétérans	37
Ministère de la Défense nationale	165
Ministère de la Santé nationale et du Bien-Etre social	12
Total	214

Nouvelles Brèves de l'Etranger

EN GRANDE-BRETAGNE.

Le changement de Ministère

Avec le départ de Sir Anthony Eden, l'équipe ministérielle a subi, comme on le sait, d'importantes modifications. Le Ministre de la Santé ayant fait partie de la charrette, l'Editorial du Journal de la British Dental Association fait remarquer, non sans amertume, que dans le cours des huit années et demi depuis que fut créé le Service National de Santé, le Ministère de la Santé a connu pas moins de six titulaires. Il est vrai, et en cela nos Confrères d'outre-Manche ont eu une nette supériorité sur nous, qu'une certaine stabilité était assurée par Miss Pat Hornby-Smith, qui resta Secrétaire parlementaire du Ministre pendant plus de six ans. Elle est également remplacée.

L'auteur de l'Editorial rappelle les inconvénients de cet état de choses, contraire à la bonne marche des Services, et exprime le voeu que ceux-ci fussent soustraits à "l'arène politique".

En saluant avec chaleur le nouveau Ministre, Mr. Dennis-F. Vosper et son Secrétaire parlementaire, Mr. J.-K. Vaughan-Morgan, il les met en présence des problèmes auxquels ils auront à faire face dans le domaine dentaire. Et, avant tout, la chute considérable de l'effectif de la profession à partir de 1958. Il conclut ainsi:

"La profession n'a actuellement que peu de confiance dans le Ministre qui, de son côté, n'en montre pas davantage envers la profession. Cet état de choses est fort regrettable et se trouve aggravé par le changement fréquent de Ministre. Il faut donc espérer que le gouvernement se rendra bientôt compte que la subordination de la santé de la nation aux convenances politiques fait courir à celle-ci de sérieux dangers".

AUX ETATS-UNIS.

Le revenu moyen net de nos confrères s'est élevé en 1955—d'après une enquête fort circonstanciée que publie le J.A.D.A.—à $12,241 contre $10,539 en 1952. Un quart des confrères ayant participé à l'enquête avaient eu un revenu net inférieur à $7,563, pour un autre quart, il était supérieur à $15,690.

Pour les femmes dentistes qui ont répondu, (au nombre de 38 seulement) le revenu moyen était de $8,318.

Les frais professionnels se sont élevés en moyenne à 43.5% du revenu brut.

Par rapport à l'importance des localités d'exercice, les revenus les plus faibles apparaissent dans les agglomérations ayant moins de 1,000 habitants, s'élevant graduellement pour atteindre le maximum dans les villes de 50,000 à 500,000 habitants et redescendre dans les très grands centres.

Parmi ces derniers, les revenus les plus élevés sont réalisés à Los Angeles ($17,529), les plus bas à Philadelphie ($9,889).

La comparaison par âge du praticien fait apparaître les revenus les plus élevés entre 40 et 44 ans.

Pour les dentistes salariés, le revenu moyen s'établit à $9,309, en augmentation de 34.5% par rapport à 1952. Il était de $10,392 pour ceux employés par d'autres dentistes, et de $8,400 pour ceux faisant partie du personnel enseignant des Ecoles dentaires.

La fluoruration de l'eau a été soumise au référendum, le 6 novembre dernier, dans 43 localités. Approuvée dans 24 d'entre elles, elle fut rejetée dans les autres 19. A Portland (Oregon), à la suite d'une campagne très passionnée, le référendum a donné 105,191 voix contre et 75,354 pour. A Topeka, ville de 100,000 habitants, la fluoruration a été décidée par un vote unanime du Conseil municipal. (J.A.D.A., décembre 1956).

L'Information dentaire, 14-2-57.

CONGRÈS PROVINCIAL

27, 28 et 29 mai

Sherbrooke vous souhaite à tous la bienvenue à l'occasion du 3e congrès de l'Association Dentaire du Québec, qui se tiendra à l'hôtel Sherbrooke les lundi, mardi et mercredi, 27, 28 et 29 mai 1957.

La partie scientifique s'annonce des plus intéressante, avec, comme conférencier-vedette, le Dr Roger Bataille, docteur en médecine et docteur en chirurgie dentaire, professeur à l'Institut de Stomatologie, éminent confrère de Paris. Le Dr Bataille traitera de sujets qui sauront capter l'intérêt de tous lors de conférences-forums aussi vivants qu'intéressants.

De source bien informée, on nous réserve des surprises des plus agréables dans le programme social et récréatif.

Alors tous à Sherbrooke en mai!

Volume 23
Number 5
Toronto
May 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

Sterilizing of Sharp Instruments Using a Boiling Emulsion of AC-10 Oil

HENRY A. THOMPSON, D.D.S., B.Sc.D., L.D.S., R.C.S. (Eng.) Toronto, Ont.*

Corrosion of sharp instruments as a result of sterilizing procedures is a harassing problem to the surgeon. Recent reports by Foster et al (1945), and Harvey et al (1947) indicate that this problem can be satisfactorily solved by sterilizing instruments in an emulsion of sodium carbonate solution, and a surgical oil (AC-10). The purpose of this study was to evaluate the procedures recommended by these workers from the standpoints of sterilizing efficacy, and preservation of instruments against corrosion.

* A thesis presented in April 1955, as a portion of the requirements for the Bachelor of Science in Dentistry degree in the Faculty of Dentistry, University of Toronto.

Literature

Boiling water was tested by Robert Koch (1881). He found it to be an efficient method for killing vegetative forms and spores. Bigelow and Esty (1920) on the other hand demonstrated that the spores of facultative thermophilic organisms resisted boiling water for periods as long as 22 hours. Knighton (1954) found that water at 100° C. destroyed spores of nine strains tested in times varying from five to thirty minutes. Reasons for such differences in findings were recognized by Pasteur (1860) who noted that thermal death times varied according to the organism tested, concentration

of organisms, age of culture, previous heat treatment of culture, culture medium, and pH of water used in sterilizing tests.

McCulloch (1945) stated that in his opinion the evidence favours the destruction of organisms by heat denaturation of proteins when moist heat is used (and by oxidation when dry heat is employed).

Chick and Martin (1910) describe three processes in the destruction of bacteria, viz the direct effect of heat on the protein of bacteria, hydrolysis of protein at high temperatures, and desiccation.

Schubert (1949) philosophizes that there are five vital functions of bacteria: —food ingestion, excretion, reproduction, defence reaction, and finally the ability to "keep alive". He stated that the effect of heat is to destroy these functions, and the last to be destroyed is the ability to keep alive.

Perkins (1954) summarizes as follows, "In brief, death by moist heat is the result of coagulation of some protein in the cell; death by dry heat is primarily an oxidation process". However, Schmidt (1954) concluded, " . . . there are a large number of factors involved in evaluating the thermal resistance of micro-organisms. The search for, and investigation of those factors and conditions which may influence the thermal resistance of micro-organisms would seem an unending task, but one which is assuredly profitable either in providing explanatory data for phenomena previously observed or serving to point to means for more adequate utilization of heat for the practical purpose of sterilization".

Sodium carbonate (2%) added to boiling water was reported by Schimmelbusch (1893), Sobernheim and Mundel (1936), and Mundel (1937) to increase sterilizing efficiency. Mundel found that spores in an aqueous suspension of earth, which resisted boiling for ten hours were killed in ten minutes when 2% sodium carbonate was added. Ecker (1940) reported destruction of spores from earth suspension by boiling in water for two hours. The addition of sodium carbonate reduced this time to five minutes. When instruments used in the test were previously immersed in lubrication oil, this time was increased to ten minutes.

A boiling emulsion of AC-10 (surgical) oil, 2% in an aqueous 2% solution of sodium carbonate, decahydrate was reported by Harvey et al (1947) to be effective in destroying vegetative organisms on dental handpieces in five minutes. A culture of B. subtilis (a spore former) was killed in all but one instance in thirty minutes. They stated that, "If anything . . . the germicidal action . . . is improved" by the addition of the oil. The latter view was given some encouragement by the work of Hariette Chick (1908) and Chick and Martin (1908 and 1910) on the bactericidal effect of oil emulsions at elevated temperatures.

Sir Humphrey Davey (1806 and 1807), and Faraday (1884) observed that boiling water corroded metals by electrochemical action, forming oxides and sulphides. Kayser (1946) noted the corrosive effects of free chlorine and iodine in water, and a pH below 7.

He stated (without evidence) that chromium-steel alloys, containing not less than 14% chromium and 0.9% carbon exhibit relative stainless properties which according to Faraday, is brought about by the passivity of a surface film. The sequence of events suggested is that immediately the steel alloy is placed in (impure) water, electrolytic action quickly takes place at the surface. Chromium oxides form a thin coating on the surface and the electrolytic action stops. The corrosion (or disintegration as Faraday termed it) also stops, and subsequent similar treatments elicited no further corrosion. Ulig (1948) also described the relative corrosion resistance of these alloys.

Kayser further stated that heat treatment of chromium-steel alloys does not produce a structure which is comparable in hardness to that of good carbon steel (0.7 to 1.3% carbon): Chromium steel al-

loys as a result do not take a good edge. Other alloys suggested were beryllium-bronze (Anaconda Brass Co.) and tungsten-steel (Downe Bros.) but these are incompletely reported in the scientific literature for use in surgical cutting instruments.

He concluded that carbon steel instruments provided the best cutting edges for surgical instruments, and the problem was to develop a non-corrosive sterilizing procedure.

Sodium carbonate solutions were reported by Schimmelbusch (1893), Sobernheim et al (1936), and Mundel (1938) to reduce corrosion by " . . . a process analogous to the passivity of Faraday"; but Foster using his optical control methods, showed that ophthalmic knives were corroded after only a half minute's boiling. He stated, "Sodium carbonate crystals on the blade produced surprising rust effects. Blood saline and sodium carbonate produced a cell on the steel where they touched, and local pitting resulted. The knife blade, being thin, cooled rapidly and therefore dried slowly, thus favouring corrosion of the edge."

AC-10 oil was developed by Le May (vide Foster, Le May, and Johnstone 1945) to be used in conjunction with sodium carbonate solution to prevent corrosion in the sterilizing process. It was found that by dipping the surgical blades in neat AC-10 oil for fifteen seconds, and then sterilizing in an emulsion of 2% w/v sodium carbonate and AC-10 oil, the blades could be boiled for fifty-five minutes without corrosion.

These workers reported (without experimental data) that AC-10 was the result of many thousand experiments to produce a combination of oil and corrosion inhibitor which could be used successfully in industry. The formula was "suitably adjusted" for surgical use and named AC-10 (surgical).

It was described as, "95% of a light petroleum neutral oil, and 5% of a complex of sodium salts of petroleum sulphonic acids as the inhibitor". They explained that the protection from corrosion was due to . . . "the inhibitor so affecting the relation between interfacial tensions in the water-metal-oil system that a film of oil, effective if monomolecular, is always preferentially formed on the metal surface". They concluded that the AC-10 method adequately protected their ophthalmic knives of high carbon steel.

Lammie and Sandford (1953) on the other hand, observed slight etching on the surface of sintered tungsten carbide dental burs (both with stainless and chrome plated shanks) examined microscopically X 1500 after sterilization in AC-10 emulsion. (No etching was observed when the burs were immersed in neat AC-10 oil prior to sterilizing.) Quantitative analysis of the liquid indicated no trace of dissolved metallic salts, neither could any change be detected by weighing the burs. They concluded that the surface corrosion was too slight to be registered by the tests used.

Experimental Procedures

Experimental procedures were undertaken with a view to assessing the comparative sterilizing efficiency and the effect on the cutting edges of detachable scalpel blades using boiling water, boiling solution of sodium carbonate 2%, and boiling emulsion of AC-10 oil 2% in sodium carbonate 2% solution.

The blades selected for the tests were Gillette shape D. By drum test they appeared to have qualities well suited for oral surgery operations. The edge appeared to be sharper (and probably more vulnerable) than other makes of blades tested. They are reported by the manufacturers to be a high carbon steel alloy made by automatic machinery and finished to a superfinish similar to that reported by Ernst and Marshand (1940).

Each of the 129 blades used in the tests was carefully examined and drum tested. The latter was accomplished by perforating a testing drum of fine African kid illustrated in photograph Fig. 1. The

FIGURE 1

Testing drum of fine African kid, above which is held a detachable scalpel blade attached to the handle selected for the tests. A clean, sharp cut using no pressure or movement across the surface of the drum was taken as a good positive test. (The weight of the handle was 31 grams).

handle, also illustrated, was selected so that the perforation of the attached blade could be accomplished without hand pressure or movement across the taut drum. (The weight of the handle was 31 grams).

Bacteriological Studies

Bacteriological tests were conducted with blades individually placed in numbered test tubes with cotton plugs, and sterilized in an autoclav at 15 pounds pressure and 250° F. for thirty minutes. A wire hook was constructed to remove and replace the blades aseptically.

The contaminating emulsions were, a mixed culture of hay infusion containing aerobic sporulating organisms (two cultures), a culture of hemolytic staphylococcus, and human saliva.

The first culture of hay infusion was obtained by placing the hay in a sterile Florence flask with sterile water, and incubating for forty-eight hours at 37° C. The second culture was obtained at room temperature. Microscopic examination gram stained showed both cultures to contain gram positive rods with spores, the second culture having more spores than the first. Reddish (1955) stated that this usually, but not necessarily, indicates higher resistance to sterilization.

The hemolytic staphylococcus was a stock culture, and the saliva was a fresh specimen collected in a sterile test tube. By microscopic examination the former was a pure culture of staphylococcus hemolyticus, and the latter a mixed culture of mouth organisms.

The culture media used were, heart infusion broth with 0.5% glucose for aerobic growth, and thioglycollate broth for anaerobic culture.

Four blades were used in each test, four were used as controls to reflect the efficiency of the original sterilization, and four as controls to indicate the ability of each of the test organisms to grow in the culture medium.

Boiling water in a large beaker was used in the first series of tests. The sterile blades were carefully removed from the test tubes in which they had been sterilized, contaminated by dipping into the bacterial emulsions, and returned to their original test tubes. Sterile water from a Florence flask was poured into each tube under sterile procedures, and the lot placed in a wire basket. This was lowered slowly into the boiling water, the level of which had been adjusted so that it reached only half way up the tubes, thus preventing wet plugs.

The temperature of the boiling water was just over 99° C. and this was lowered when the basket was inserted. It took approximately twenty seconds for the temperature to be restored to boiling. Sterilization was timed from this point for five minutes.

The basket was then removed from the boiling water, and as quickly as the technique would permit the blades were removed aseptically from the original tubes and inserted in similarly numbered tubes containing the culture broth. They were incubated at 37 C., forty-eight hours for

aerobic and ninety-six hours for anaerobic growth.

Similar procedures were followed using sodium carbonate solution and AC-10 emulsion for sterilizing. In preparing the sodium carbonate solution a large beaker was partly filled with water and boiled vigorously to expel the air. Sodium carbonate decahydrate of the ordinary Hammer and Sickle household variety was used. A 2% w/v solution was made by weighing 4 gm. of Na2 CO3 to 200 cc. of water.

The AC-10 emulsion was made by adding 4 cc. of AC-10 oil to 200 cc. of vigorously boiling 2% sodium carbonate solution slowly, to make a fine emulsion with no oil floating on the surface.

In both cases some of the liquid was poured into Florence flasks and autoclaved.

The results were as recorded in Table 1.

TABLE 1—1st Experiment

Results of the bacteriological studies on the comparative efficiency of the three sterilizing methods tested.

Incubated at 37°C—*48 hrs.* for aerobic and *96 hrs.* for anaerobic growth.

	Sterilizing procedures (five minutes)								
	Boiling water			Boiling water c 2% Na_2CO_3			Boiling water c 2% Na_2CO_3 and 2% AC-10		
Organisms tested	No. of tests	Results pos	Results neg	No. of tests	Results pos	Results neg	No. of tests	Results pos	Results neg
Spore bearing rods c spores, 1st culture.	4		4	4		4	4		4
Spore bearing rods c spores, 2nd culture.	4	3	1	4	3	1	4		4
Staphylococci.....	4		4	4		4	4		4
Saliva:									
Aerobic.....	4		4	4		4	4		4
Anaerobic.....	4		4	4		4	4		4
Totals.....	20	3	17	20	3	17	20		20

The twenty blades used to reflect the effectiveness of the original autoclave sterilization, were transferred directly from the original test tubes, under aseptic conditions, and inserted in similarly numbered tubes of nutrient broth. These were cultured for forty-eight hours, aerobic and ninety-six hours for anaerobic growth at 37° C. These twenty tubes were negative for growth.

TABLE 1a—1st Experiment

Results of the bacteriological studies on the comparative efficiency of the three sterilizing methods tested.

Incubated at 37°C—*four days* for aerobic and *eight days* for anaerobic growth.

Organisms tested	Sterilizing procedures (five minutes)								
	Boiling water			Boiling water c 2% Na_2CO_3			Boiling water c 2% Na_2CO_3 and 2% AC-10		
	No. of tests	Results		No. of tests	Results		No. of tests	Results	
		pos	neg		pos	neg		pos	neg
Spore bearing rods c spores, 1st culture.	4	4		4		4	4		4
Spore bearing rods c spores, 2nd culture.	4	4		4	3	1	4		4
Staphylococci.....	4		4	4		4	4		4
Saliva:									
Aerobic.....	4		4	4		4	4		4
Anaerobic.....	4		4	4		4	4		4
Totals.....	20	8	12	20	3	17	20		20

The twenty control blades used to indicate the ability of the micro-organisms to grow in the culture media were removed aseptically from the original tubes, contaminated, and transferred to similarly numbered tubes of nutrient broth. Four blades were used for each contaminant except in the case of saliva where four blades were cultured for aerobic and four for anaerobic growth. Each of the twenty showed growth, which on microscopic examination, gram stained, proved to be the original organisms.

In the sixty sterilizing tests, growth was determined by examination of the incubated tubes for turbidity. This was confirmed by microscopic examination of smears, gram stained from half of the tubes in each category. The other half was streaked to blood agar plates, and colonies if any examined microscopically.

All sixty tubes were incubated for an additional forty-eight hours aerobic and ninety-six hours anaerobic growth and tested as above. The result was that those tubes containing spore bearing rods and sterilized in boiling water grew out with the longer incubation time.

In the case of Na2 CO3 solution and AC-10 emulsion the longer incubation made no perceptible difference in the results. (See Table 1a.)

Discussion of results—

When boiling water was used for sterilizing, seventeen of the twenty tubes showed no growth. The three tubes where growth occurred were those containing the blades which had been contaminated in the second culture of hay infusion. This was possibly due to the fact that this culture contained large numbers of

spores. The fact that the spore bearing rods grew out after doubling the incubation time indicated that the sporicidal effectiveness of boiling water is unreliable.

Sodium carbonate solution appeared to be a more effective sterilizing medium than boiling water, particularly in respect to spores. This confirms the experimental findings of Schimmelbusch (1893) and others.

When the AC-10 emulsion was used none of the twenty tubes showed growth. Growth inhibition by the carry over of the AC-10 sodium carbonate combination was considered to be little or nothing. This evidence was taken from the results of the control experiments which were used to reflect the ability of the test organisms to grow under the incubation conditions used. Each organism grew

CORROSION STUDIES

TABLE 2—2nd Experiment

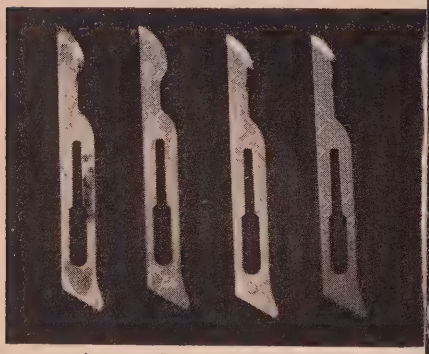
Results of Corrosion Studies

Method of Sterilizing	Blade No.	Observations	
		Macroscopically	Microscopically
Boiling water....	110	Marked corrosion. Does not pass drum test (see fig 2A).	Much corrosion. Loss of continuity of edge particularly at tip. Blade detail almost obliterated by corrosion (see fig 3).
	111	do	do
	112	do	do
	113	do	do
	127	do	do (see figs 7A & B)
Boiling water c 2% Na_2CO_3	114	Blade coated with Na_2CO_3. Some corrosion seen. Passes drum test poorly (see fig 2B).	Coating of Na_2CO_3 obliterates blade detail. Some corrosion. Loss of continuity of blade particularly at tip (see fig 4).
	115	Same as blade 114 but does not pass drum test.	Similar.
	116	do	Similar.
	117	do	Similar.
	128	do	Similar (see figs 8A, B, and C).
Boiling water c 2% Na_2CO_3 and 2% AC-10	118	Blade appears unimpaired. Clean shiny surface. Some oil deposit. Drum test normal (see fig 2C).	Blade detail unaltered. Slight alteration in edge. Tip is slightly eroded (see fig 5).
	119	do	Similar. Tip is not eroded.
	120	do	do
	121	do	Similar. Tip slightly eroded.
	129	do	Similar. Slight erosion of edge and tip (see figs 9A and B).
Controls New blades....	122 to 126	Some wax deposit (see fig 2D).	Blade detail clearly seen. Some wax deposit at tip (see fig 6).

well, indicating that the carry over had little effect, and that the boiling emulsion was responsible for sterilizing.

Conclusion—Each of the three methods provided efficient sterilization by boiling for five minutes; if anything, the AC-10 emulsion was the best.

A series of experiments were then set up to test for corrosion effects of the three sterilizing methods. The three liquids were prepared as formerly and kept boiling in three beakers. Fifteen new blades were selected and five placed in each beaker and boiled for five minutes. The blades were removed, dried in tissue, numbered, and left overnight. This procedure was repeated for three consecutive days to accentuate any corrosion effects. Finally the blades were attached on a page of paper with scotch tape and five new blades similarly set up for comparison.



A B C D

FIGURE 2

A — Sterilized in boiling water.
B — Sterilized in sodium carbonate solution.
C — Sterilized in AC-10 emulsion.
D — New blade.

All twenty blades were examined macroscopically and microscopically after sterilization. The last blade in each series (viz blades 127, 128, and 129) were examined by photomicrography before and after sterilization.

The results were as shown in Table 2.

The Bausch and Lomb vertically illuminated metallurgical microscope was selected for microscopic studies, since it appeared to be best suited to both the examination of the blades and metalographic photography. Carbon arc lighting with a yellow and a green filter to correct for colour aberrations in the lens system and to adjust the intensity of the light was selected. This seemed to give the best detail and contrast. Magnifications from 100 to 2080 times were tried. It was found that above 280X, the magni-

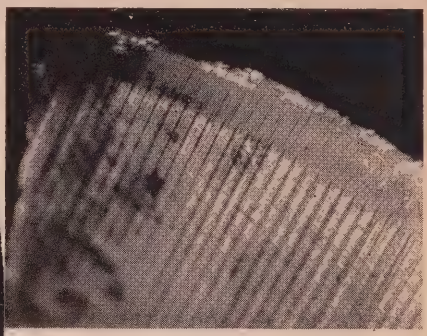


FIGURE 3

Photomicrograph (X 150) of the extreme point of blade illustrated in Figure 2-A (boiling water) showing marked corrosion, and loss of continuity of the edge, particularly at the extreme point.

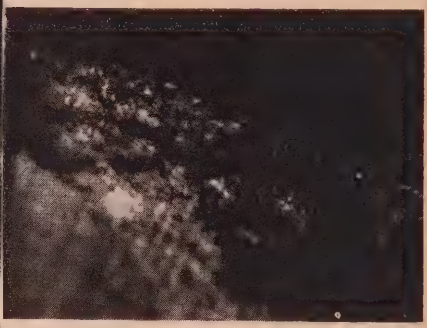


FIGURE 4

Photomicrograph (X 150) of the extreme point of blade illustrated in Figure 2-B (sodium carbonate). There is little evidence of corrosion, but this may be masked by the heavy sodium carbonate deposit. There is loss of continuity of the edge near the tip.

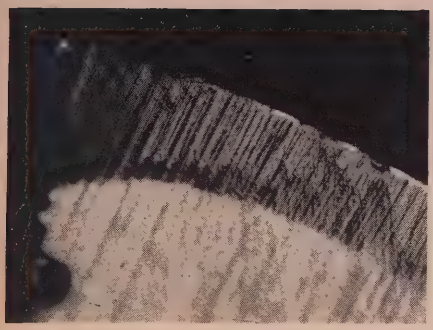


FIGURE 5

Photomicrograph (X 150) of the extreme point of blade illustrated in Fig 2-C (AC-10). There is no evidence of corrosion except at the extreme tip where there is a slight loss of continuity of the edge.

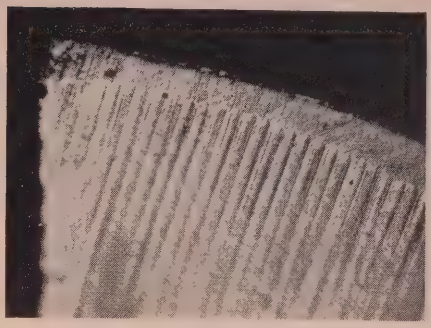


FIGURE 6

Photomicrograph (X 150) of the extreme point of a new blade illustrated in Fig 2-D. There is some of the protective wax coating seen at the tip.

fications were so great and the depth of focus so small, that it was not possible to make a practical interpretation of the image.

A magnification of 140 X was selected for examination of the blade points through the binocular eyepieces. The convenient setting of the photographic bellows increased the magnification to 150 X.

In order to show more clearly the comparative corrosion effects of the three methods of sterilizing, the last blades in each series, i.e., blades 127, 128, and 129 (see Table 2, Page 14) were carefully selected by microscopic examination of 200 blades. Macroscopically and by drum test each of these blades appeared to be identical, but microscopically it was difficult to select three blades which compared in bevel and point. Those finally

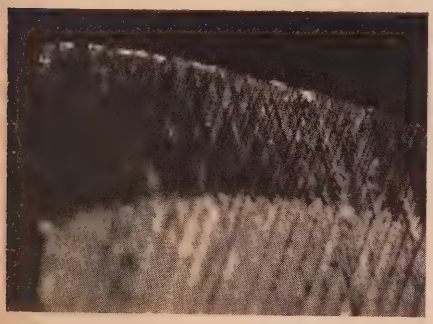


FIGURE 7A — New blade Before (water)

Blade selected for corrosion test, using boiling water sterilization.

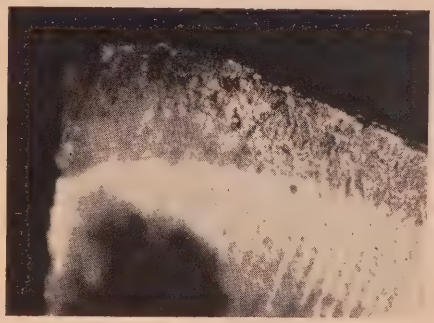


FIGURE 7B — After sterilization (water)

After sterilization in water there is much less of bevel detail by corrosion, loss of continuity of the edge, and the point is eroded. Macroscopically the blade appears corroded, has a poor edge, and does not pass drum test.

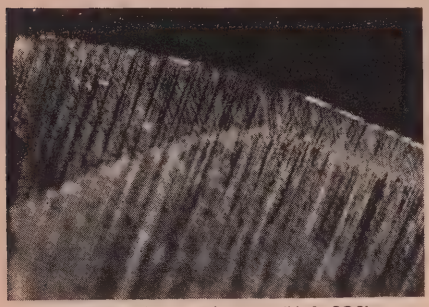


FIGURE 8A — Before — (Na2 CO3)

Blade selected for corrosion test using boiling sodium carbonate solution sterilization.

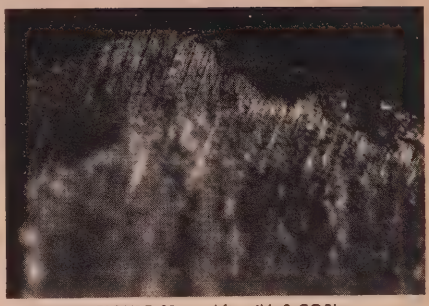


FIGURE 8B — After (Na2 CO3)

Much loss of bevel detail probably from sodium carbonate deposit. Point eroded. Macroscopically blade appears coated and corroded. Does not pass drum test.

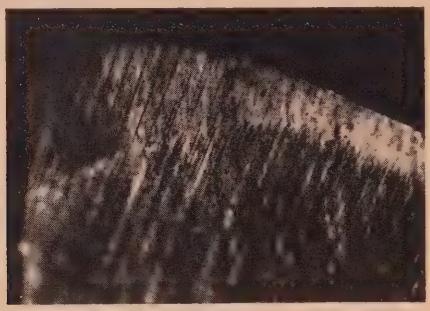


FIGURE 8C

Same as 8B, but after cleaning with benzine. Detail of the bevel markings show up better. There is some evidence of corrosion which does not appear to be as advanced as in Fig 7B.

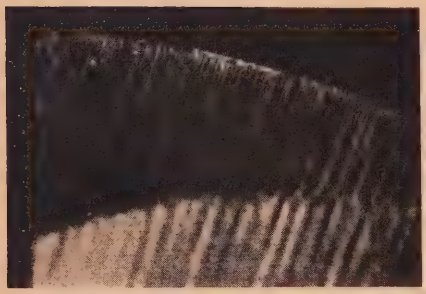


FIGURE 9A — Before — (AC-10)

Blade selected for corrosion test using AC-10 emulsion for sterilizing.

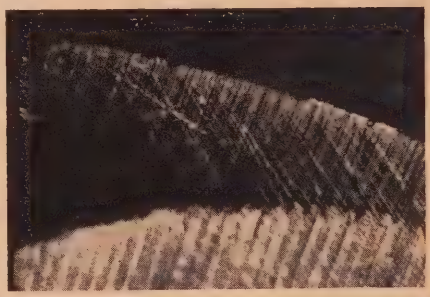


FIGURE 9B — After — (AC-10)

Bevel detail unaltered. There is a slight alteration in the edge and the extreme tip is eroded. Macroscopically this appears bright and clean, with perfect edge. Passes drum test like the new blade.

selected were as nearly identical as it was possible to find.

Photomicrographs were taken both before and after sterilization, (see Figs. 7, 8, and 9).

Conclusions from the Corrosion Studies

Water sterilization under the experimental conditions used produced excessive corrosion so that the blades tested were unsuitable for surgical use.

Sodium carbonate 2% solution, although appearing to reduce the corrosion somewhat, did cause a deposit. In all but one case the blades were unsuitable for use.

AC-10 emulsion did not produce any perceptible damage, except for slight changes seen under magnification (150 times).

Summary

Boiling water is an efficient method of sterilizing. It can not be relied on to destroy spores in five minutes, and it produces corrosion of the carbon steel used in the tests.

Sodium carbonate appears to improve the sterilizing ability of boiling water. It does produce some corrosion, and leaves a deposit which detracts from the efficiency of the edge. This deposit makes the instrument sticky to handle, and might provide an objectionable carry over into the incision.

AC-10 emulsion provides, if anything, improved sterilizing efficiency, and it satisfactorily maintains the integrity of the blade. There is an oil deposit on the surface of the instrument which may be objectionable if not removed with sterile gauze. Johnstone (vide Foster, Le May and Johnstone 1946) reported the injection of AC-10 emulsion into the conjunctival sacs of rabbits with no harmful results. This was taken as evidence that this preparation does not provide any objectionable carry over.

Little, if any bacteriocidal effect was noted by the carry over of AC-10 emulsion, an abundant growth being obtained in each control experiment. (The blades were protected from corrosion in the initial sterilizing by insertion in AC-10 oil or AC-10 emulsion.) This confirms the findings of Foster, et al (1945, vide P. 3).

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86 *Bloor Street, West*

Fibrous Dysplasia*

MAXWELL N. ROCKMAN, D.D.S., B.Sc.D. and GEORGE A. MORGAN, D.D.S.

Fibrous dysplasias, (ossifying fibromas) are classified as bony benign lesions in which the normal osseous tissue structure has been replaced by fibrous connective tissue that has osteogenic tendencies.

The formation and development of fibrous dysplasias are considered to be directly related to some embryologic dysfunction occurring during intramembranous ossification, and which may be seen clinically and radiologically years later in one or occasionally multiple areas in the facial bones.

The histo-pathologic pattern varies depending upon the proportion of fibrous tissue to bone, the pattern in which the bone is laid down, the extent of calcification and the amount of cystic formation. The histo-pathologic appearance may vary from predominantly fibrous tissue with an occasional island of osteoid tissue to a dense trabeculation of bone. The radiographic appearance will change as the histo-pathological pattern varies, some lesions appearing radiolucent, while others will have a mottled and irregular radiopaque density and in still others there will be a predominance of bone structure similating an orange peel, thumb print, or ground glass appearance.

Fibrous dysplasia may involve any of the bony structures, but is most frequently observed in the cranial facial skeleton. The ratio of maxillary to mandibular involvement is approximately 4 to 1. The disease may involve either the maxillary or mandibular bones singly or simultaneously, or more than one lesion may occur separately in either the maxillar or the mandible. Fibrous dysplasia may occur in association with the normal dentition or in the edentulous maxilla or mandible.

Reported cases seem to suggest a familial and perhaps a hereditary tendency.

The age incidence may be of some diagnostic significance since the great majority of reported cases are in young adults. There does not seem to be any sex, colour, or creed differentiation.

Painless enlargement is the most uniform complaint and the most significant finding.

Clinically, fibrous dysplasia may produce considerable deformity with marked enlargement of one side of the face, sometimes with general displacement of the orbital contents with or without impairment of vision.

When there is maxillary involvement, particularly in the younger age groups, radiographic examination often reveals a homogenious density with a stippled appearance.

Fibrous dysplasia, when observed radiographically in patients past middle age, in which the lesion has a history of long duration, may appear not unlike an osteoma due to the greatly increased ratio of osseous to fibrous tissue.

Fibrous dysplasia, when observed radiographically in edentulous areas in patients 35 to 60 will generally have varying degrees of density appearing in the same ossifying fibrous connective tissue. The margins of the lesion have a tendency to be generally blurred and irregular in outline.

Fibrous dysplasia observed in the mandible may on occasion have many areas

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of decreased density with cyst-like characteristics and may appear not unlike adamantinoma. Clinically fibrous dysplasia in the mandible seems to follow a growth pattern beginning at the angle or in the anterior region.

Fibrous dysplasia lesions are usually slow growing and self limiting, with long periods of remaining stationary in size or even regressing. The disease may have periods of activity with rapid growth, and the lesions may obtain huge proportions.

Fibrous dysplasia does not appear to metastasize. Treatment of fibrous dysplasias will vary from more observation to radical resection and does not depend on radiographic or pathologic diagnosis but rather on the clinical behavior of the lesion.

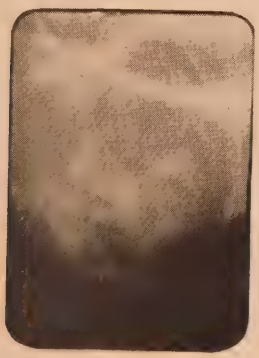
Four out of twelve observed cases are presented illustrating fibrous dysplasia lesions in various age groups, associated with the normal dentition and in edentulous areas. The clinical presentation of a case is illustrated to show the rate of mandibular growth over a period of four years in a young individual, now age 20. (Case 4, figures 1 and 2.)

CASE 1

CASE 1, FIGURE 1—Radiograph illustrating fibrous dysplasia, right posterior maxilla. Patient white, female, age 11. Note homogeneous density and stippled appearance.

CASE 1, FIGURE 2—Radiograph illustrating normal appearance, left posterior maxilla. Compare with Figure 1.

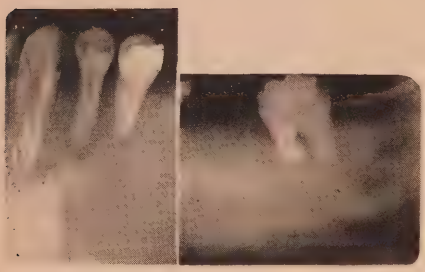
CASE 2



CASE 2, FGURE 1—Radiograph illustrating bilateral fibrous dysplasia in edentulous maxilla. Patient, white, male age 35.

CASE 2, FIGURE 2—Photograph of model illustrating difference in size of lesions with patient history that the large involvement (right side) is of some ten years' duration while that of the smaller lesion (left side) is of four years' duration.

CASE 3



CASE 3, FIGURE 1—Radiographs illustrating fibrous dysplasia, right posterior mandible. White male, age 45.

CASE 4

CASE 4, FIGURE 1—Photograph illustrating clinical appearance, fibrous dysplasia, white male, age 16, left mandible.

CASE 4, FIGURE 2—Photograph illustrating clinical appearance, fibrous dysplasia, white male, age 20, left mandible. Note comparative size with Figure 1, fibrous dysplasia, 4 years' duration.

Useful Prescriptions in Dentistry

R. KEITH LINDSAY, D.D.S., M.S., Vancouver, B.C.

The following prescriptions were prepared by Dr. Lindsay on request and are intended as a useful reference. They cover such needs as Moderate pain, Marked pain, Severe pain, Pain and Anxiety, Sedation and Hypnosis, Control of Infection, Topical Medication, and Control of Allergic Reaction.

EDITOR.

CONTROL OF PAIN (Adult Dosage)

I MODERATE PAIN

1. Rx
   A.S.A. — 0.32 gm.
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞2 q.3h. for pain P.R.N.

   Acetylsalicylic acid (Aspirin) for the relief of mild discomfort.
   Effective for arthralgia.

2. Rx
   A.S.A. Compound
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞2 q.3h. for pain P.R.N.

   Acetylsalicylic acid
   Acetophenetidin
   Caffeine
   Possibly more effective than aspirin with less depressing effect.

3. Rx
   Bufferin (B-M)
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞2 q.3h. for pain P.R.N.

   Acetylsalicylic acid
   Magnesium carbonate
   Aluminum glycinate
   A buffered aspirin tablet which reduces the gastric upset as experienced with aspirin on occasion.

4. Rx
   Trigesic (Squibb)
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞2 q.3h. for pain P.R.N.

   Acetyl-p-aminophenol
   Aspirin
   Caffeine
   Fast acting analgesic; raises pain threshold 26%. Used pre-operatively may permit greater tolerance for discomfort. Also in combination with codeine.

5. Rx
   Edrisal (SKF)
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞2 q.3h. for pain P.R.N.

   Benzedrine sulfate
   Aspirin
   Phenacetin
   Relieves pain and the depression that magnifies pain. Use with caution in patients manifesting anxiety or restlessness or cases in which vasoconstrictors are not indicated.

II MARKED PAIN

1. Rx
   Ecetophen compound with codeine phos. gr. ½ (Frosst)
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞1 q.4h. for pain P.R.N.

   A.S.A. compound with codeine phos.
   Available in combination with codeine as follows:
   ℞222—codeine gr. ⅛
   ℞282—codeine gr. ¼
   ℞292—codeine gr. ½
   ℞294—codeine 1

III SEVERE PAIN

1. Rx
Demerol hydrochloride 50 mg.
D.T.D. Tabs. ℞6
Sig. Tabs. ℞1 q.4h. for pain P.R.N.

Analgesic, spasmolytic and sedative. Does not depress respiration or cough reflex. Does not usually have side reactions of morphine or codeine.

2. Rx
Pantopon 10 mg.
D.T.D. Tabs. ℞6
Sig. Tabs. ℞2 q.3h. for pain P.R.N.

A combination of opium alkaloids acting in synergism. Analgesic and sedative effect with less side reactions than morphine.

IV PAIN AND ANXIETY

1. Rx
Phenaphen (Robins)
D.T.D. Cap. ℞12
Sig. Cap. 1-2 q.3h. for pain P.R.N.

Phenacetin
Aspirin
Hyoscyamine sulfate
Phenobarbital
Also in combination with codeine gr. ¼ and ½.
As these analgesics and sedative both act on different areas of C.N.S., they are both synergistic and enhance each other.

2. Rx
Empiral (B. & W.)
D.T.D. Tabs. ℞12
Sig. Tabs. ℞2 q.3-4 h. for pain and anxiety P.R.N.

Phenobarbital
Acetophenetidin
Aspirin
Combined sedation and analgesia for the control of pain associated with nervous tension.

3. Rx
Veramon
D.T.D. Tabs. ℞12
Sig. Tabs. ℞1 q.4h. for pain and anxiety P.R.N.

Aminopyrine
Diethyl-barbituric acid
Total dosage should not exceed 5-6 tabs. per day. **Must be used with caution** as aminopyrine has tendency to produce agranulocytosis.

SEDATION AND HYPNOSIS

I OFFICE SEDATION

1. Rx
Seconal (Lilly) — 0.1 gm.
Sig. Caps. ℞1 15-30 min. pre-op.

An extremely fast acting barbiturate of short (3-4 hr.) duration. Useful to allay fear and apprehension for office procedures. **Patients should be accompanied** by responsible person and not permitted to drive.

2. Rx (CHILD DOSE)
Elixir phenobarbital — 120 c.c.
Sig. 2 teaspoons ½ to 1 hr. pre-op.

Each teaspoon contains 0.016 gm. (gr. ¼) or each fl. oz. contains gr. 2. If using with adults the druggist can double the strength and thus reduce the amount of elixir.

II SEDATION

1. Rx
Phenobarbital 0.032 gm.
D.T.D. ℞8
Sig. Tabs. ℞1 q.4-6h. for anxiety P.R.N.

A slow acting barbiturate with a prolonged effect. Useful to allay mental unrest for prolonged periods. Tends to accumulate and untoward symptoms may follow usage over long periods.

III HYPNOSIS

1. Rx
   Pentobarbital sodium (nembutal) — 0.1 gm.
   D.T.D. Caps. ℞6
   Sig. Caps. ℞1 H.S. Repeat in 4 h. if awake

   Relatively short acting with moderate duration. It in itself does not control pain but is supplied in combination with aspirin. Patient awakes feeling refreshed.

2. Rx
   Carbital (P.D.)
   D.T.D. Caps. ℞6
   Sig. Caps. ℞1 H.S.
   Repeat in q.4h. if awake

   Combines the hypnotic action of pentobarbital and sedative effect of carbromal. Also available as an elixir.

CONTROL OF INFECTION

I SYSTEMIC MEDICATION

1. Rx
   Gantrisin (Roche) — 0.5 gm.
   D.T.D. Tabs. ℞30
   Sig. Tabs. ℞4 stat. then
   tabs. ℞2 q.4h.

   A sulfonamide providing wider anti-bacterial spectrum. Probably the most desirable of the sulfonamides for general use. Usual precautions must be observed and high fluid intake maintained (3000 c.c./day).

2. Rx
   P.G.A. (B.D.H.) 0.25 gm.
   D.T.D. Tabs. ℞12
   Sig. Tabs. ℞1 q.6h. while awake. Must be taken at least 1 and ½ hrs. before or after meals

   Penicillin G Ammonium 445,250 U./Tab. Maintains an adequate blood titer for most oral infections.

3. Rx
   Aureomycin (Lederle) — 250 mgm.
   D.T.D. Caps. ℞12
   Sig. Caps. ℞2 stat. then 1 q.6h. with milk

   Given in low dosage with milk there is decreased tendency to develop intestinal symptoms. Especially effective against gram negative organisms.
   Thought to be beneficial in treating herpetic and aphthous lesions.

4. Rx
   Terramycin (Pfizer) — 250 mgm.
   D.T.D. Caps. ℞12
   Sig. Caps. ℞2 stat.
   then Caps. ℞1 q.6h.

   Effective against gram positive and gram negative bacteria.
   Usually well tolerated. Anti-bacterial action against a wide range of pathogenic organisms.

5. Rx
   Ilotycin (Lilly) — 100 mgm.
   D.T.D. Tabs. ℞24
   Sig. Tabs. ℞2 q.6h.

   Erythromycin
   A new antibiotic effective against most penicillin-susceptible organisms. May be given to patients known to be allergic to penicillin.
   Causes less drastic changes in the intestinal flora than occur with the other broad spectrum antibiotics.

6. Rx
   Chloromycetin (P.D.) — 250 mgm.
   D.T.D. Caps. ℞12
   Sig. Caps. ℞1 q.4-6h.

   Highly effective against a wide range of bacterial infections.
   Several cases of aplastic anemia have been reported following the use of this drug, and it should **not** be used indiscriminately for minor infections.

II TOPICAL MEDICATION

1. Rx
   Cepacol solution (Merrell) — 180 c.c.
   Sig. Use as mouth wash q.3h.

   Ceepryn chloride, a quaternary ammonium salt. Combines detergent cleansing with antibacterial activity.
   Non-irritating to mucous membranes. Should **not** be used for prolonged periods.

CONTROL OF ALLERGIC REACTION

GROUP I

1. Rx
   Benadryl Hydrochloride (P.D.) — 50 mg.
   Mitte ℵ $\frac{\cdot\cdot}{\text{XII}}$
   Sig. Kapseals $\frac{\cdot}{\text{I}}$ q.4h.

Antihistamine drugs are placed in one of four groups. All drugs in each group have like action and effect.

GROUP II

Rx
Pyribenzamine (Ciba) — 50 mg.
Mitte ℵ $\frac{\cdot\cdot}{\text{XII}}$
Sig. Tabs. $\frac{\cdot}{\text{I}}$ q.4h.

If there is no improvement in the patient after 8 hours of treatment, change to a drug in **another** group, and **not** to one in the same group.

Continue medication for at least 3 days after all signs and symptoms have been eradicated.

Going from Group I to Group IV the drugs have a decreasing sedative action.

GROUP III

Rx
Phenergan Hydrochloride (Wyeth) — 12.5 mg.
Mitte ℵ $\frac{\cdot}{\text{VI}}$
Sig. Tabs. $\frac{\cdot\cdot}{\text{II}}$ q.12h.

GROUP IV

Rx
Chlor-Trimeton Maleate (Schering) — 4 mg.
Mitte ℵ $\frac{\cdot\cdot}{\text{XII}}$
Sig. Tabs. $\frac{\cdot}{\text{I}}$ q.4h.

925 West Georgia St.

Orthodontic Section Meeting—Canadian Dental Association

June 22-23, 1957 — Royal Alexandra Hotel, Winnipeg

Saturday

Dr. Thomas Speidel, University of Minnesota, will present two papers.

Sunday

Dr. Holly Halderson, Toronto — *"Minute Forces"*

Discussions will follow all presentations.

Multiple Cementoma

R. E. DIPROSE, D.D.S., Toronto*

A Case Report

Cementomas are benign tumors of unknown aetiology which are composed of the dental tissue cementum. Thoma[1] describes the condition in three stages. Initially there is a demineralization and resorption of the bone at the apex of the tooth. In the second stage sufficient cementum has formed to produce some radiopaqueness within the larger radiolucent area. The third stage usually has the appearance of a radiopaque mass of comparatively even density encircled by a narrow radiolucent line.

History

A married woman aged forty-two, born in Canada, had a routine x-ray survey made of her teeth by her dentist, Dr. Frank Martin, in June, 1942. The patient was the mother of two children and while she had the usual childhood diseases her family and her medical histories were irrelevant.

Clinical Examination

The mouth was in a clean healthy condition with a normal appearance of the mucous membrane. Digital examination of the left mandibular region did not disclose any swelling of the bone or thickening of the tissues. While the crowns of the lower left second bicuspid and two molars were heavily filled the teeth responded to vitality tests:— cold (ethyl chloride) and the electric pulp tester.

* Associate Professor of Oral Surgery, Faculty of Dentistry, University of Toronto.

FIGURE 1

X-rays made in 1942 indicating a change in the bone at the root apices of the third molar.

The x-rays shown in fig. 1 were taken in June 1942 and there appears to be a change in the bone around the root apices of the third molar. It is a well defined semicircular radiolucent area containing a smaller radiopaque body. The bone around the remaining root apices has a normal healthy appearance.

FIGURE 2

X-rays of the same case as fig. 1, made in September 1944

Fig. 2 represents x-rays that were made in September 1944. The area at the root apices of the third molor varies little in its appearance when compared to Fig. 1 but now a change in the bone at the root apex of the second biscuspid is indicated.

This is a well demarcated radiolucent area, circular in outline which is slightly radiopaque toward the centre. Since this tooth responded to vitality tests the appearance corresponds with the second stage of cementoma formation as described by Thoma[1]. The much smaller radiolucent area immediately beneath the above area could be the mental foramen.

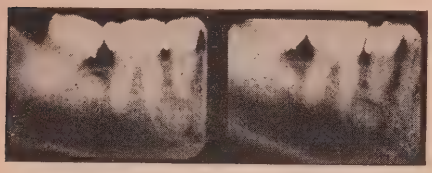


FIGURE 3

X-rays of the same case as figures 1 and 2 made in 1953.

Fig. 3 is reproduced from x-rays made in 1953. While there is little change in the appearance of the bone at the apices of the third molar when compared to figures 1 and 2 the central portion of the area beneath the second bicuspid has now become a radiopaque mass surrounded by a fairly regular line of demarcation. This would correspond with the third stage of cementoma formation as described by Thoma[1]. The teeth at this time responded to vitality tests.

COMMENT

Since it is usually impossible to differentiate radiographically between a rarefying osteitis caused by an infected pulp and the first stage of cementoma formation only the clinical findings can be used for diagnostic purposes. In cementoma formation pain is never present and the tooth responds to vitality which is the reverse of the devitalized often painful infected tooth.

Bernier and Thompson[2] list a summary of reported cases by Stafne, Thoma, Bradley, Dewey, Zegralli and their own group of fifteen cases.

Total number of cases 136
Average age 41.5 years

The incidence of cementoma formation is one for males to four for females, one lesion in the maxilla to seventeen in the mandible.

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74 St. Clair Ave., W.

LADIES' EVENTS — WINNIPEG, JUNE 23-26, 1957

Say Doctor—did you pass on that Special letter to your wife? We certainly hope you did because it contained many items of special interest for the ladies. You know—most conventions never seem to look after the ladies well enough. They always seem to have too much time on their hands. The Ladies' Committee of the convention in Winnipeg promise you this—they will provide a programme that will be most pleasing and entertaining to all the attending ladies. The committee has been hard at work laying the plans for the forthcoming convention and in this respect they have spared no effort.

ABSTRACTS

Conditions which May Influence the Choice of Partial or Complete Denture Service

OLIVER C. APPLEGATE, D.D.S., D.D.Sc.

A goodly number of varying conditions comprise the factors to be evaluated in making the frequent choice between partial and complete denture service. Since many situations are border line in character, there are honest differences of opinion to be expected. It is urged that in making such analysis, that the best interests of the patient be considered, not on a basis of immediacy, but rather on what will be of most benefit for him throughout his expected life span. In view of the greatly increased life expectancy of the present age, this altered viewpoint in prosthodontics is urgently needed. This division of dentistry has geriatric problems of great importance.

The probable length of service to be had from the remaining teeth must be estimated in terms of the cost of their reconditioning and maintenance. Caries susceptibility, and the attitude of the patient toward dental caries control, as well as his economic status, must be considered in this evaluation. If the condition of the remaining teeth has been further impaired by the cervical loss of supporting alveolar bone, another economic complication has been added. Because of the unfavourable leverage which follows such bone loss, the greatly increased work-load on the reduced surface of the supporting alveolar walls is such that tissue tolerance will be exceeded unless splinting of adjacent teeth is accomplished. The value of this procedure is well established, but the fact remains that it entails arduous and time-consuming effort, and, therefore, for many it will present financial difficulty. Let us face the facts. Regardless of the need, or the patient's great desire for a partial denture service, and not withstanding every consideration which an overly generous prosthodontist can make, there will be those cases in which a good partial denture program is economically impossible.

However, when this obstacle does not exist, it is urged that every effort be made to provide a partial denture service of greater longevity. The marvelous advancements made in recent years in endodontics and periodontics is certain to result in an increasing number of partially edentulous mouths. Teeth which were routinely lost yesteryear are being saved today. Still more will be salvaged tomorrow. The vigorous attempt to indoc-

trinate a physiologic approach to the rendering of partial denture service has brought about a marked improvement in partial denture design and fabrication. Under favourable conditions, the partial denture need not be a "stop-gap" service, nor need it be a "stepping stone" to the complete denture. Certainly, some partial denture treatment will fail. It is inevitable that some patients will decline physically. But this group of failures should not include those partial dentures which were from the beginning intended only to be temporary. The author urges that these appliances be called "treatment" dentures. They are to be used only where conditions contraindicate the attempt to retain the remaining teeth. The patient should be impressed with the facts that the "treatment" denture is of great value but that it is to be temporary.

An increased effort toward the conditioning of the edentulous ridge structure should be made before the residual ridge is used to support a prosthesis, whether partial or complete. This is going to be the next great step forward in prosthodontics. It will be a further step toward achieving DeVans' ideal, "the preservations of that which remains, rather than meticulous replacement of that which is missing . . . "

The Journal of Prosthetic Dentistry. Vol. 7, March 1957, No. 2.

Impressions for Temporary Acrylic Resin Jacket Crowns

ARTHUR S. FREESE, D.D.S.

The usual way to make a temporary quick-curing acrylic resin jacket crown is to first secure an irreversible hydrocolloid impression. This impression is then used to reproduce the anatomy of the tooth in acrylic resin, either by placing the mixed resin in the impression and re-seating the impression in the patient's mouth, or by painting the resin into the impression to form a shell which is then used in the mouth.

The impression material must be accurate and yet elastic so that it can be reseated in the mouth as many times as necessary, and require no special care, and have sufficient dimensional stability so that it can be left around the office for extended periods of time.

A tray is selected which is large enough to cover the teeth to be prepared and at least one tooth on either side of them. Modelling plastic is softened, placed in the tray, and inserted in the patient's mouth and held in position for about three minutes and then withdrawn. A large number of holes are drilled into the modelling plastic with a No. 8 round bur and are undercut so that a rubber impression material will be securely gripped and held.

A rubber impression material is mixed in accordance with the manufacturer's directions and placed in the modelling plastic tray. The tray is seated so there is a thickness of no more than 3 or 4 mm. of rubber impression material. After the rubber material has set, the impression is withdrawn and is used for the fabrication of temporary quick-curing acrylic resin jacket crowns.

The Journal of Prosthetic Dentistry January 1957, Vol. 1. No. 1.

Stress Analysis in Distal Extension Partial Dentures

GEORGE W. HINDELS, D.D.S.

Masticatory stresses exerted on the base of a distal extension partial denture are transmitted to the supporting structures through contacting parts of the appliance. If the parts are incorrectly designed or constructed, they will alter the direction and force of these masticatory stresses, and may create stresses which are not within the physiologic limits of tissue tolerance. Movement of the denture base as a result of vertical stresses and the displaceability of the mucosa must be recognized and dealt with in tissue-borne appliances. The partial denture should be constructed so this movement is vertical in relation to the supporting bone. Clasps and rests should be designed to allow for this vertical movement of the denture base. Stresses other than those vertical to the abutment teeth should be reciprocated. Reciprocation is best obtained by contact of rigid parts of the partial denture with modified axial surfaces of abutment teeth which are made parallel to each other and to the path of insertion.

The Journal of Prosthetic Dentistry
Vol. 7. March 1957, No. 2.

Relative Caries-Inhibiting Value of Topically Applied Sodium Silicofluoride and Sodium Fluoride

JOHN K. PETERSON, D.D.S., M.P.H., and WM. A. JORDAN, D.D.S., M.P.H.

A total of 610 children divided into 3 groups were given 1, 2, or 4 treatments of 0.9 per cent sodium silicofluoride on one side of the mouth and 4 treatments of 2 per cent sodium fluoride, or nothing on the opposite side.

The caries incidence in the second year of the study corroborates the results after 1 year. Two topical treatments of 0.9 per cent sodium silicofluoride probably reduced caries incidence by about 15 per cent in the 2 years of the study. However, when matched against 4 treatments of sodium fluoride, more DMF teeth and surfaces developed with both 1 and 4 treatments of sodium silicofluoride. While the superiority of sodium fluoride was not satisfactorily significant, it should at least be safe to assume that sodium silicofluoride is not more effective than sodium fluoride as a topical treatment in the prevention of dental caries.

Journal of Dental Research
February 1957, Vol. 36, No. 1.

Teeth, Streptococcus Viridans, and Subacute Bacterial Endocarditis

F. G. HOBSON, D.S.O., D.M., F.R.C.P. and
S. E. JUEL-JENSEN, B.M., B.Ch. Cand. Med. (Copenhagen)

In a series of 43 patients admitted to hospital with subacute bacterial endocarditis (S.B.E.) due to Streptococcus viridans, no patient was edentulous. The diagnosis was confirmed by a positive blood culture in 25 patients (58%); in 18 patients (42%) the diagnosis rested on the clinical picture, but was confirmed by post-mortem examination in five cases. In seven patients (16%) the initial attack of S.B.E. was specifically related to dental extractions 10-42 days before admission to hospital. Relapses occurred only in five patients who retained some teeth after the initial attack of S.B.E. had been subdued. All five patients had positive blood cultures. In four patients such teeth as they retained had been judged as "good" after clinical and radiological examination, such teeth as were considered "bad" having been removed under antibiotic cover during the initial attack of S.B.E. In the fifth patient dental extractions were not carried out until the second relapse.

Antibiotic "cover" for dental extractions in patients in the course of active therapy did not prevent a bacteriaemic shower, although this was immediately controlled, nor was this "cover" effective in sterilizing the tooth sockets or mucous membranes of the mouth.

We raise the question of whether failure to prevent a significantly high relapse rate has been due not to ignorance of fundamental facts but to the uncritical acceptance of the view that the organism concerned and the antibiotic to be used will determine the final success or failure of treatment.

Our small series of cases can be regarded as representative of the cases of S.B.E. admitted to any large general hospital. In S.B.E. due to Str. viridans the evidence overwhelmingly incriminates the teeth as the all-important source of infection. So long as teeth or fragments of teeth remain in the jaws a formidable, but preventable, hazard is ever present in the lives of these patients, and we postulate that in all patients who develop S.B.E. due to Str. Viridans, scrupulous, complete dental clearance should be carried out as an essential item of the therapeutic attack upon the disease.

British Medical Journal, December 29, 1956

Observations on the Use of Adrenochrome in Dental Practice

EDWIN W. ROBERTS, D.D.S.

Adrenochrome, an oxidation product of adrenaline, represents a new type of haemostatic agent whose primary action is directed at the integrity of the capilliary wall. Adrenochrome in itself is a very unstable compound, and for this reason is supplied in its stable monosemicarbazone form. To bring about increased solubility, this derivative is combined with sodium salicylate to form the com-

pound, adrenochrome monosemicarbazone sodium salicylate complex.

The action of adrenochrome is purportedly a correction of excessive capilliary permeability to a more normal physiologic equilibrium. There is reason to believe, however, that even in the presence of capilliaries with "normal" permeability a haemostatic action will be attained.

Adrenochrome is supplied in ampule, tablet, and syrup form as Adrenosem Salicylate. Each ampule contains 1 c.c. of solution and represents 5 m.g. of adrenochrome. The tablets are supplied in both 1 and 2.5 m.g. forms, and the syrup contains 2.5 m.g. per teaspoonful. Although reported by others as being free of toxic reactions, Adrenosem has been observed to be painful on intramuscular injections, which would be indicative of an irritant solution. Observations on the use of the syrup and tablet forms, however, have shown no unfavourable reactions in any of the patients receiving either form of administration and, in my opinion, these represent the most ideal forms of administration in dental practice. Visual observation of the gastric mucosa of an excised dog stomach showed on irritation after forty-five minutes when the syrup of Adrenosem was fed by means of a stomach tube.

Satisfactory haemostasis following the administration of one 2.5 m.g. tablet or one teaspoonful of Adrenosem one hour preoperatively has been reported by Kingsbury and Young. In this study it was found that a more pronounced and desirable haemostatic effect was obtained if the dose of the syrup or tablet form was not less than 5 m.g. every two hours beginning four hours before the dental appointment. In view of the freedom from any distressing reactions to the patient, the syrup or tablet form of administration is recommended in all cases involving prophylactic administration for anticipated excessive bleeding. Parenteral administration is recommended only for cases of postextraction haemorrhage where rapid onset of haemostasis is essential.

Oral Surgery, Oral Medicine, and Oral Pathology
January 1957. Vol. 10. No. 1.

A Measure of Tissue Response to Frequency of Toothbrushing

WILLIAM R. STANMEYER, D.D.S.

The response of gingival tissue to the stimulation received from various frequencies of toothbrushing has been measured. Using a rigidly controlled questionnaire in which the natural reluctance and resistance to report deviations in oneself from known standards was overcome, the toothbrushing habits of 3,068 persons was obtained. This toothbrushing frequency was correlated with the oral gingival health using the PMA Index as a standard of measurement.

The results of this survey indicate that gingival massage in the form of toothbrushing is beneficial and that there is a significant decrease in gingival inflammation when even the minimum amount of one brushing a day stimulation is employed. The benefits of daily gingival stimulation appear to reach their optimum with two brushings a day. There is an increase in health with more frequent brushing, but benefits derived from this increase are small.

The Journal of Periodontology
January 1957, Vol. 28. No. 1

Preservation of the Dental Pulp in Deep Seated Cavities

HAROLD BERK, D.D.S.

A treatment plan to assure survival of teeth with deep carious lesions, based on the response of the pulp to caries and to calcium hydroxide when used as a protective agent, has proved successful.

Calcium hydroxide in a methyl cellulose vehicle has a salutary effect on the pulp. Its use for coating dentine, for pulp capping, and after pulp amputation has resulted in a gratifying incident of success.

In applying this material, certain conditions favour one or another form of treatment. The following is an outline of the criteria established for selecting the procedure of choice in the treatment of teeth affected by deep seated cavities. All denuded dentine should be coated with a protective film of calcium hydroxide prior to the insertion of any filling material or cementation of crowns, bridges, inlays or splints.

Pulp capping is indicated if there is mechanical or carious exposure of the pulp of a vital tooth, in the absence of contamination, infection or necrosis; or if intact pulpodentinal membrane is present. If penetration has occurred, this penetration should have been by mechanical means only.

Pulp capping is contraindicated if there has been carious exposure in which the deeper structures of the pulp have been contaminated; or if gross infection, localized or generalized, is present, as evidenced by exudation of pus, serum or necrotic cells.

Pulp amputation is indicated if there has been (1) exposure of a vital pulp with a localized abscess or infection in the coronal portion of the pulp; (2) laceration of the pulpodentinal membrane with introduction of contaminants; (3) exposure caused by traumatic injury, or (4) a doubtful prognosis for pulp capping.

Pulp amputation is contraindicated if there is(1) necrosis of the pulp, or (2) roentgenographic evidence of a region of apical rarefaction.

The Journal of the American Dental Assoc. February 1957, Vol. 54. No. 2.

Pulp Capping with Calcium Hydroxide and Penicillin

NORMAN FEITELSON, D.D.S.

Methods of treating the pulp exposed by caries have occupied the attention of dentists for many years. Not until it was demonstrated that the exposed pulp can heal and that it can protect itself by depositing new dentine, did any real prospect of successful treatment appear.

Pulp capping is generally understood to mean the covering of the exposed pulp, as it remains after complete removal of carious dentine, by placement of some dressing material directly over the pulp tissue, without any further operative procedures on the pulp itself. This dress-

ing is then protected by some suitable filling material. It is the simplest of all forms of treatment of the exposed pulp as it can be carried to completion in one visit, including the placement of the filling. It involves the minimum manipulation of the pulp itself, with minimum tissue trauma.

In this study teeth were accepted, regardless of the size of the exposure, at random, as they appeared in the private practice of the author. Teeth whose pulps exhibited any evidence of impairment of vitality were excluded. History of spontaneous or prolonged pain, absence of bleeding upon exposure or probing, or presence of periapical bone changes were considered evidence of impaired vitality.

All operative treatment was carried out under local anaesthesia. Carious dentine was completely removed, the cavity was irrigated with a stream of tap water and then dried. The exposed pulp was covered with a paste consisting of a mixture of calcium hydroxide and crystalline penicillin G (approximately 10,000 units) in one drop of water. In the later stages of the study the paste consisted of a methyl cellulose–calcium hydroxide suspension (Rower) with penicillin. The dressing was covered with a soft mix of zinc phosphate cement, applied without pressure. This cement was allowed to set and an amalgam filling was placed immediately.

Table I gives the results of this treatment:

TABLE 1 — Summary of Results

	Teeth Treated	Successful	%	Unsuccessful	%
Primary	34	31	91	3	9
Permanent	49	45	92	4	8
Total	83	76	91.6	7	8.4

The distribution of periods of observation is shown in Table II

TABLE II — Periods of Observation

No. of Months	Total	Successful	Unsuccessful
Less than 12	4		4
12-23	30	28	2
24-35	16	16	
36-47	14	13	1
48-59	7	7	
60-81	4	4	
72-83	4	4	
84+	4	4	
Total	83	76	7

The patients ranged in age from 4 to 60 years.

TABLE III — Age Distribution of Patients

Age in Years	Total No. of Cases	Successful	Unsuccessful
0-5	7	6	1
6-10	34	32	2
11-20	16	16	
21-30	8	7	1
31-40	16	13	3
41+	2	2	
Total	83	76	7

Since pulp capping is the least complex of the various methods advocated for treatment of the carious pulp exposure, it is reasonable to consider pulp capping with calcium hydroxide and penicillin as the treatment of choice for carious pulp exposure.

Journal of Dentistry for Children
Fourth Quarter 1956

"There is nothing about the manipulation of gold foil that cannot be acquired by any one whose natural gifts fit him to the practice of dentistry. To be successful, all that is required is the very careful following of a certain technique in all of its details. Any short cut or any compromises are almost always followed by failure. Any one who will master the technique and have courage to follow where ever it leads him need never fear, for the results of his application will be amply satisfying."

C. E. Woodbury

EDITORIAL

The New Graduate and the Local Dental Society

The month of May has been traditionally associated with the termination of the University academic year. It is a reminder too, to each graduate that he is now one more year removed from the eventful day when his university officially acknowledged that he was at least academically prepared to meet the requirements and demands of the professional career which awaited him. That this month appears with seemingly increasing acceleration is all too well realized by those whose graduations are behind them. Ten years in the future seems most remote but ten years in the past is but as yesterday.

The new graduates with their ambition and enthusiasm are a welcome addition to the ranks of the profession. Most clubs, organizations, and lodges have special ceremonies of welcome when a newcomer enters the fold. Do we in the dental profession, however, make any appreciable effort to greet our new confreres and offer to them the gracious hospitality and friendship which membership in a profession should engender? Undoubtedly many dentists could reply affirmatively with no qualification whatsoever. There are others however, who have never considered it either necessary or desirable to make such overtures.

Probably no time in the history of our profession has such an acute need existed for a unity of purpose and a consolidation of effort. Canada is now well advanced into the third stage of a Health Insurance programme, a fact which does not seem to be fully realized by many in our profession. The current legislation concerning Hospital Insurance is but another milepost on the journey to a more comprehensive plan. The activities of the members of the dental profession and conversely the lack of effort by dentists, may well have a most significant bearing upon the ultimate future of dentistry in this country. Strong, purposeful dental organizations, having due regard for the welfare of the public, and the retention of high standards of competence and qualification for the profession are required.

Any programme or plan designed to whittle away at the traditional patient-dentist relationship, with the considerations of responsibility and service which such a relationship implies, is to be condemned. Professional personnel must not be forcibly separated from their personal responsibility to those whose health needs have been entrusted to them.

Local dental societies are the official voice of the profession in the areas in which they are situate. Some societies in Canada are vigorous, energetic, resourceful, purposeful. They accept responsibilities in their communities when their contributions can be of benefit. Other groups are not particularly noted for their

achievements and it is the rare occasion indeed when one becomes aware of any significant project or programme which they have developed as a service to their communities and thereby an enhancement to their profession.

There is a place for the new graduate in this professional framework. Association with others in the group provides some of the experience he lacks. Many of the errors in patient relationship and practice administration so detrimental to good public relations, may be effectively avoided through a sharing of the experience of the initiated with the newcomer. The young graduate, too, is able to bring with him an abundance of energy and vitality and that enthusiasm invariably possessed by the newly converted. It is a dreadful waste in that so many of these people are not sought out and given the opportunity of sharing in the organizational efforts of the profession. Some members still look upon the newcomer in terms of that most repugnant expression, when used in a professional sense, "competition", rather than regard him as a welcome addition to the body of professional health workers. The number of persons engaged in the profession of dentistry in Canada, are far too few at best to justify anything less than harmony and rapport among the members.

Dental societies should play a significant role at least in their own areas. Dr. Willard C. Fleming, Dean of the College of Dentistry in the University of California in his presidential address to the Convocation of the American College of Dentists in 1951 said that "we have seen very bad public relations come to other groups and professions because of their lack of understanding of the fundamental trends in our way of life. They have tended to oppose new thoughts and ideas rather than guiding them along appropriate channels. Great political and social changes are taking place all over the world, and the speed of the reaction is assuming almost explosive proportions. . . . . Many factors are involved in these changes and all of them lead to an increasing complexity in our way of life. As we change from the self sufficiency of an agrarian type of economy to the mutual dependency of an industrial economy, we are more and more concerned with the welfare of those around us, both on a national and international basis. If the activities and decisions of our fellow men affect us, it is quite reasonable to suggest that what we do as individuals and as dental organizations will affect them. . . ."

In the political arena the term "grass-roots" has become familiar. It is safe to say that the grass-roots of the dental profession are the local societies spread from coast to coast. What they do, how they think, what they believe, what they know and understand are vitally important to the future welfare of the Canadian dental profession. Likewise the welfare of the dental profession is vitally important to the standards of future dental health services to the Canadian people. These considerations are not, as some might have us believe, antagonistic, but rather concomitant with both the consumer and supplier of a service having due regard and concern for each other.

Undoubtedly the local society finds itself in most favourable circumstances to "guide new thoughts and ideas along appropriate channels." The effectiveness of the society however, is often severely handicapped when, as in some areas, fewer than one-third of the dentists consider it either necessary or desirable to belong. They must believe that what occurs or develops beyond the front doors of their offices can have little or no effect on them and therefore it is not important to keep abreast of developments and have a part in the destiny of the vocation which is the means of their livelihood.

When certain patterns of behaviour or conduct are established it is often most difficult to change or redirect them. This then is a good argument for developing within the new graduate, patterns of pro-

fessional concern and responsibility which show regard for the welfare of the profession and the good of the public. This can only be established by members being sufficiently aware of the duty which rests upon them to contact these younger practitioners, invite them to the meetings, make them feel needed and welcome and, most of all, give them a job to do. Nothing heightens interest as participation—nothing so discourages it as indifference.

BOOK REVIEWS

The Story of The Royal Canadian Dental Corps. Prepared by: Lt. Col. H. M. Jackson, M.B.E., E.D. The Canadian Dental Association. Pages: 475. Price: $5.00

The story of the Royal Canadian Dental Corps is one which should have universal appeal, approval and acceptance by all members of the profession in Canada. First and foremost, every member of the dental services in either of the two great wars and those who have served up to the present time will wish to read the full account of that in which they actively participated and every officer is recorded in the 176 pages of fifteen appendices. To other members of the profession who did not have the privilege of actively serving, they cannot but derive much pleasure and pride from the military record of their profession in times of international strife. To those members who have joined the profession since the last conflict and who, may God forbid, may be called upon to play their part militarily in the event of another conflagration, this is a book of intense historical and instructive interest and value.

Due to the innumerable and concurrent activities of the Corps in various parts of the world over a period of many years, such a story cannot be related with any continuity and certainly not in chronological order, hence a review of this book in the common acceptance of the term cannot be accomplished. However, by the same token, this is a book which can be read in part or in full with satisfaction.

This story is not written in glorification of any individual, nevertheless, factual statements regarding many as they relate to the Corps in general are given. It is not a complete record of anyone's military history nor could anyone expect it to be in a one-volume production. Nevertheless, it contains much of interest to every Canadian dentist and admittedly certain portions will prove of greater interest to some because of their personal knowledge and participation.

Any such limited review of this book must be reduced to a mere mention of some of its contents which commences with adequate proof of the long standing interest of the Canadian Dental Association which in 1902 requested "the provision of a regular army dental staff".

The early history of dental services in the British Army notes that in 1798 dental instruments were included in equipment but up to 1821 the infantry recruit was required only to be able to bite a cartridge. Dentists serving in various capacities in the South African war are interestingly recorded.

The organization of the Canadian Army Dental Corps in 1915 and its subsequent services up to 1918 and the post war period should prove of interest to all.

The reorganization in 1935 which placed the dental services under the director general of medical services in Ottawa relegated dentistry to a position similar to medicine in the previous century.

During the immediate pre war years the Canadian Dental Association had an active military

committee functioning in an effort to "reorganize dental services in conformity with present day requirements and standards which would first and foremost place the dental services under the Adjutant-General's Branch. Such resolutions were presented to the Minister of National Defence on 30th July, 1938 but no action was taken until under the compulsion of hostilities, the Canadian Army Dental Corps was disbanded on 30th August, 1939, and the following day the Canadian Dental Corps became its successor.

The history of Corps Headquarters and that of all district companies across the Dominion are presented in interesting and reasonable details.

The 1st. Divisional Dental Company C.A.S.F. and the establishment of headquarters overseas is given attention and likewise all overseas companies are considered as they assume their new roles.

Dental services with the R.C.A.F. intensified by the British Commonwealth Air Training plan was a challenge to Canadian dentistry and likewise the expansion of the Royal Canadian Navy presented its share of responsibilities.

Our interest is well held by the activities of our service in North Africa, Sicily, Italy, and later in the preparations for operation "Overlord" and the "D" Day invasion followed by Normandy, North West Europe and Germany on to "E" Day and the activities "through to the finish", the latter including the establishment of a dental training centre at the University of Utrecht, Holland.

Every Canadian dentist with red blood in his system should read with thanks and appreciation the all too brief account of the special forces, particularly the "C" force to Hong Kong which spent nearly four years in Japanese prisoner of war camps. This alone should bring to our minds that many yet living as well as those passed to the great beyond have paid a high price for the freedom we still enjoy.

"Effective 15th January, 1947, His Majesty the King was pleased to approve the giving of the title 'Royal' to the Corps" which, having proven itself capable of rendering a high standard of dental service to all three services of our forces became the Royal Canadian Dental Corps. This book will prove to be a glorious page in the history of the first century of Canadian dentistry and no living member of our profession should content himself until he has perused its pages.

C. L. Strachan.

Practical Exercises in Dental Mechanics. Prepared by: F. G. Shaw, L.I.B.S.T., & D.C. Scott. Published by: The C. V. Mosby Co. Pages 196. Price: $10.00

This text appears to be well written and on a level that may be easily comprehended by the technician. In scope it deals with techniques of long usage as well as some of the newer advances in technology. Being profusely illustrated and intended as a supplement to other instruction it should prove to be a valuable aid to those who are engaged in this phase of dentistry. The chapter dealing with anatomy and nomenclature will certainly assist the technician in the interpretation of the dentist's instructions. This in itself will supply a demand of long standing.

Perhaps in a later edition something dealing with the anatomical articulation of the teeth supplied by a prosthesis could be included to advantage.

E. Downton.

Oral Histology & Embryology 4th Ed. Prepared by: Balint J. Orban. Published by: The C. V. Mosby Co. Pages: 364 with 269 illustrations. Price: $9.00

This edition is the first revision of the above textbook since 1953, and it contains very few changes from the 1953 version. Any alterations in text are minor, and the illustrations remain essentially the same as in the earlier edition with a few electron photomicrographs included to demonstrate something of the ultrastructure of tooth tissues.

The preface to this edition contains a statement of the reluctance of the editor to include many of the recent histochemical and electron microscopic observations on dental tissues on the basis that the interpretation of these observations is still controversial. This reviewer tends to disagree with the editor. It is felt that the inclusion of recent accepted and confirmed findings and even a discussion of the problems of interpretation, provided this is done intelligently, does much to make a student text more interesting to read, and perhaps helps to stimulate student interest in the field.

The 4th edition remains a well written, well illustrated text in Oral Histology which will continue to be valuable for students of Dentistry.

K. J. Paynter.

Accepted Dental Remedies. Prepared by: A.D.A. Council on Dental Therapeutics, 222 East Superior Street, Chicago 11, Illinois, U.S.A. Pages: 214. Price: $2.00

ACCEPTED DENTAL REMEDIES is revised annually by the Council on Dental Therapeutics of the American Dental Association, Chicago, Illinois, in order to permit the inclusion of new information. This publication is designed to serve as a current handbook of dental therapeutics. It also contains a list of therapeutic products marketed in the United States which are acceptable to the Council on Dental Therapeutics. In addition it includes the Council's provisions for acceptance of products, some information on standardizing agencies, and on prescription writing.

A chapter on the treatment of emergencies in the dental office has been added in the 1957 edition.

ACCEPTED DENTAL REMEDIES contains 214 pages, including a general index, a distributors' index, an index to current reports from the Council, and an index to more recent reports on products not listed in ACCEPTED DENTAL REMEDIES, including those classified in Groups B, C and D.

The Dental Treatment of Maxillo-Facial Injuries. Prepared by: Sir. Wm. Kelsey Fry, C.B.E., M.C., M.D.S. (Durham), D.Sc. (McGill), F.R.C.S., F.D.S. (Eng.) and Terence Ward, M.B.E., F.D.S., R.C.S. (Eng.), L.R.C.P., L.R.C.S. (Ed.) Published by: Charles C. Thomas, Springfield, Illinois. Obtainable through The Ryerson Press, Toronto. Pages: 368 with illustrations. Price: $11.50

The first edition of this book appeared in 1942 and was followed in 1943 by a Supplement. Further experience and new material in the field of maxillo-facial surgery prompted the publishing of the revised second edition.

The subject matter in this text is extremely well organized, well illustrated and presented in a concise and easily read manner.

The early chapters are devoted to a review of basic material necessary in the treatment of fractures. The types of fractures are well illustrated along with their clinical and x-ray diagnosis. To further make the subject clear chapters deal with anatomy, pathology of bone repair, surgery of hard and soft tissues, antibiotic therapy and the treatment of infections.

The actual treatment of fractures of the mandible and middle third of the face is discussed in detail giving a variation of methods for reduction and fixation. A separate chapter deals with laboratory technique involved in the construction of the cap splint type of fixation.

The important subjects of preliminary hospital treatment, complications of fractures, loss of tissue including bone grafts and prosthetic appliances are discussed. The final chapter deals with general and local anaesthesia.

The authors, with their vast knowledge and background of civil and war injuries have presented a most complete text for those concerned with the dental treatment of mandibular and maxillary fractures.

R. S. Van Alstine.

Synopsis of Pathology. W. A. D. Anderson, 4 ed. The C. V. Mosby Co., St. Louis, 1957, 801 pp. 328 Illus. and 12 colour plates. $8.75.

This book is in the form of a manual whose scope covers both general pathology and pathology of the special organ systems. The author is an authority in his field and is widely known as editor of one of the standard texts in pathology. In his Synopsis he has concentrated the important fundamentals without sacrificing their readability and, as a result the student or practitioner can review the subject either in part or as a whole very conveniently.

This latest 4th. edition has been printed on heavy glazed white stock which greatly improves the quality of the illustrations and clarity of the type.

The contents are essentially the same as those of the 3rd. edition except that each chapter has been reviewed and in many places new paragraphs have been added where new data has become available. Reclassifications are given in the fields of the collagen diseases, the reticulo-endothelial tumours and the chemical poisons. Each of the twenty-five chapters is supplied with a generous and up to date list of references for anyone wishing to pursue a given subject further.

The book is recommended to anyone wishing a ready reference in the field of pathology.

H. A. Hunter.

THE ASSOCIATION

ANNUAL MEETING — WINNIPEG, 1957

Board of Governors Meeting — June 19th - 22nd
Convention — June 23rd - 26th

The Board of Governors meeting will open at 2.30 p.m. on Wednesday, June 19th at the Royal Alexandra Hotel.

Detailed information respecting the convention is contained in the March issue of the Journal of the Canadian Dental Association. Members are urged to complete advanced registration form which appears on page 160 of the Journal and forward the same to Dr. W. F. MacKenzie, 700 Boyd Bldg., Winnipeg 1, Man.

Owing to other conventions being held in the west at or about the same dates, and tourists reservations, members from eastern points are advised to make reservations immediately. Tickets may be picked up later. Railway identification certificates for reduced fares are obtainable by writing C.D.A. Headquarters.

Trans-Canada Air Lines offer reduced fares for a group of 10 or more travelling together. They must travel together on the going journey, but may return at their individual convenience, and they must all hold the same type of ticket.

According to the number of advanced registrations received to date the attendance at Winnipeg will be large. You can assist the Committee making arrangements for you by sending in your form at once.

Prince Rupert, B.C. Fluoridates

Information has been received that Prince Rupert, B.C., commenced fluoridating its water supply March 1st, 1957. The population is 9,000.

Federal Budget 1957

As stated previously the deductibility of pension payments was granted for income tax purposes. Considerable activity is apparent by representatives of all companies in this field of activity. Caution is advised in entering into any contract until the complete terms become known. Information respecting the applicable terms under the C.D.A. Pension-Assurance Plan will be available to the membership in the near future.

For several years the Association has made presentations requesting alleviation of the tariff on dental equipment. As a result in 1955 dental chairs; dental units; electric dental engines and parts of the foregoing were made duty free. The inclusion of dental cuspidors has been sought through further efforts and now is added to the free list in the tariff schedule contained in the 1957 budget.

Dean Ellis Elected President A.A.D.S.

Dr. Roy G. Ellis, Dean, Faculty of Dentistry, University of Toronto, was installed President of the American Association of Dental Schools on March 27th last. The event occurred during the Annual Meeting of the A.A.D.S. held at Atlantic City, March 25-28. Dean Ellis is also Chairman of the C.D.A. Council on Dental Education.

New Dental School for Manitoba

Announcement was made in the Speech from the Throne at the opening of the Manitoba Legislature last January that a dental school would be established. The matter is now confirmed by provision of funds for the purpose in the budget. The monies provided are in accordance with the estimates given in the Paynter report based on the survey conducted last summer on the establishment of a dental school.

A faculty of dentistry is to be estab-

lished in the University of Manitoba capable of graduating 30 dentists a year. Recommendation is also made for provision to graduate 15 hygienists a year. It is understood that development of the school is to be initiated as quickly as possible.

Fluoridation Statements

The following statements are extracted from reports appearing in the March issue of '57 of Public Health Reports, published by U.S. Department of Health, Education and Welfare:

"Fluoridation in Grand Rapids Benefits Older Children"

"According to the results of the annual dental examination in Grand Rapids, Mich., fluoridation has benefitted not only children born since fluoridation was begun but also those born before, reported Dr. Francis A. Arnold, Jr., director of the National Institute of Dental Research, Public Health Service.

"For 16-year-olds, for example, the DMF rate decreased 26 per cent between 1944 (the year before fluoridation was started) and 1954, he said. For children drinking fluoridated water continuously since birth, the percentage decrease ranged from 50 to 75."

"Fluoridated Water Inhibits Caries in Erupted Teeth"

"A study of children in Grand Rapids and Muskegon, Mich., indicates that artificially fluoridated drinking water inhibits caries in teeth already erupted. The protective effect on teeth in the pre-eruptive stage has been established in earlier studies.

"Although the protection given erupted teeth of a single individual is small, the total effect on a large number of people may have public health significance, stated Dr. Richard L. Hayes, Dr. Norman Littleton, and Carl L. White, of the National Institute of Dental Research, Public Health Service."

"Periodontium Not Injured by Use of Fluoride Water"

"The use of fluoride-bearing water does not adversely affect the prevalence or severity of periodontal disease in children or adults, according to examinations of more than 20,000 persons, reported Dr. Albert L. Russell of the National Institute of Dental Research, Public Health Service.

"In each of three comparisons between a group drinking fluoride-bearing water and a group drinking fluoride-free (or essentially free) water, the fluoride group exhibited the more favourable periodontal condition on direct examination, Russell said. Also, extractions because of periodontal disease were somewhat less frequent among adults in the fluoride communities."

THE LIBRARY

Additions

BOYD, D. A., and NAGLE, R. J.: Dental Clinics of North America. Symposia on I. New developments in operative dentistry. II. Differential diagnosis of prosthodontic needs. March 1957. 332 p. illus.

CIPES, L. R.: Prescription writing and materia medica. 4th ed. 1956. 598 p.

KNOTT, L. L.: The PR in profit; a guide to successful public relations in Canada. 1955. 254 p.

KRASSE, B.: Studies on acidogenic microorganisms in the mouth; with special reference to dental caries activity. 1954. 32 p.

LAMMIE, G. A.: Full dentures. 1956. 212 p. illus.

MANHOLD, J. H.: Introductory psychosomatic dentistry. 1956. 193 p. illus.

NEVAKARI, K.: An analysis of the mandibular movement from rest to occlusal position. 1956. 129 p. illus.

ORBAN, B. J.: Oral histology and embryology. 4th ed. 1957. 379 p. illus.

P.S.O.: Pratique odonto-stomatologique. Sommaire de la serie No. 2. 1956.

SHAW, F. G., and SCOTT, D. C.: Practical exercises in dental mechanics. 2nd ed. 1955. 205 p. illus.

UNIVERSIDADE DO BRASIL: Anais da Faculdade Nacional de Odontologia. Vol. VIII, 1955. 366 p. illus.

UNIVERSITY OF ILLINOIS: Current advances in dentistry. Edited by Saul Levy. 1956-1957. 113 p. illus.

WELANDER, E.: The occurrence of dental caries in the permanent dentition. 1955. 122 p. illus.

COMMITTEES AND COUNCILS

Health Insurance Studies

During the last few months a major step has been taken in the progressive movement of introducing health insurance in Canada. You will recall that we have spoken of health insurance as being a five-stage planned operation, the third step being hospital insurance. Medical care and then dental care are said to be the other steps. Let no one fool us by substituting names for these various phases of this strategy. They constitute health insurance and we would be very foolish to stick our heads in the sand and try to persuade ourselves otherwise.

In the meantime many voluntary health insurance plans for medical care have been developed covering a large percentage of the population. During recent years several types of group plans for dental care have come into operation in the United States. It is to be admitted that a demand for health care on a group basis exists.

This trend represents a socio-economic change. Whereas dental services have been rendered by individual contract between dentist and patient, this new trend presupposes the existence of a contract between two groups. The groups are on the one hand those desiring to purchase the services and on the other those who render the services.

Any agreement of this nature necessitates full cooperation of members of the profession with their representatives. In addition, to the mechanics of administration and the method of payment, need exists for a complete understanding of the reasons underlying this indicated change in the practice of dentistry. Increasingly, many of the population desire a system or method whereby all health services may be compensated for by regular contribution rather than by payment of an accumulated account.

If such group arrangements for dental health services are to develop in Canada, then the opinion is expressed that organized dentistry should provide leadership. Indication exists that effort is being made in some quarters toward obtaining dental services on such basis. Necessity exists for having in readiness necessary data and proposed administration set-up to meet such demands. A time of crisis is not the best time to meet demands of this nature.

The Committee on Health Insurance Studies has endeavoured to keep abreast of these developments. Through study of existing group plans and other proposals the committee has accumulated knowledge available for use in dealing with this matter.

Harvey W. Reid
Chairman

CLASS REUNIONS — WINNIPEG, JUNE 23-26, 1957

Winnipeg is the geographical centre of Canada, thus it is ideally suited for class reunions. Classmates from Vancouver to Halifax may meet here with the least possible inconvenience.

When was the last time your class had a reunion? How about coming to Winnipeg this year. As you saw by the Convention Supplement in the March issue, Winnipeg is preparing for a great convention. Your publicity committee will handle all printing and mailing if your class plans a reunion.

***Write:* Dr. K. Routley, 704 Osborne St., Winnipeg, Manitoba**

ECONOMIC SECURITY

Professional Liability of Dentists

EDSON L. HAINES, Q.C., Toronto

PART III

THE DENTIST'S RESPONSIBILITY FOR OTHERS

Where the dentist is the master of the other person, such as the nurse or attendant, he is responsible for what is done in the course of the employment. There was a time when it was thought due care in the selection of a nurse or assistant was all that was required. That is not so today. You have employed that other person in your place to carry out duties you have assumed to your patient, and you are responsible for her negligence, no matter how qualified. Therefore, it behoves you to exercise strict supervision over nurses, assistants and technicians. And the same rule applies to a dentist in your employ.

What about dental partnerships? Each partner is liable for the malpractice of the other. The very essence of partnership is that each is the agent of the other.

What of the case where a dental surgeon and a duly qualified anaesthetist collaborate in an operation and something goes wrong? Assuming one is not the partner or the servant of the other, then each is only responsible for his own negligence. Each has a separate duty to the patient. But even here there is an exception to this rule, in the case of obvious misconduct. For example. I should think that an anaesthetist who proceeded to give an anaesthetic and permitted an intoxicated dental surgeon to operate would be responsible, along with the dental surgeon, for the injury resulting to the patient. The same rule would apply if a surgeon permitted an anaesthetist who was intoxicated to give an anaesthetic. I mention these only as illustrations of the type of obvious case that would have to arise before one dentist attending an operation would be responsible for the malpractice of another.

What is the situation of a doctor who goes away on his holiday and leaves a substitute in his place? Unless the substitute is his partner or an employee, he will not be liable. What he is really doing is sending another professional man to continue the treatment in his absence. The relationship of physician and patient immediately arises between the substitute and the patient, and the substitute alone is liable for his malpractice.

Then there is the question of the dentist who recommends an oral surgeon to perform an operation, and the patient complains of malpractice by the oral surgeon. The first dentist is not responsible for the negligence of the oral surgeon, unless he participates in the very act that

caused the injury. There might be responsibility where the dentist assisted the oral surgeon at the operation but, if he does not participate in the operation, the dentist will not be liable.

Responsibility for Premises

Although not professional malpractice, I would like to comment upon the responsibility of all professional men for the state of their premises. A patient visiting a doctor is entitled to assume that those portions of the premises to which he is invited are in a reasonable state of repair. And subject to having his claim qualified by his own negligence, the patient is entitled to recover damages from the doctor when he has been injured by the state of disrepair. Slippery sidewalks and floors, defective stairways, rugs that tend to move on highly polished floors, equipment poorly secured which falls on a patient or collapses under his weight are apt illustrations. And the same duty extends to those who accompany the patient to your office.

Abandonment: Termination of Doctor-Patient Relationship

Having accepted a case, a dentist cannot summarily quit without first giving the patient sufficient notice to enable him to procure another dentist. There is a continuing duty upon the dentist to look after the patient's health, it being an implied term of his contract to treat the patient during his illness. The length of the warning, and the nature of it, depends upon the circumstances and the availability of other dentists. If I were a dentist, I would not be inclined to retire from a case unless I was morally certain that a court would say, should the question ever come before it, that I had given ample notice and that other doctors were available.

On the other hand, a patient may dismiss a doctor peremptorily. It is his privilege. He need give no particular notice so long as he makes it understood that the services are terminated. Generally speaking, the retaining of a second doctor without the consent of the first will be construed as a discharge of the first doctor.

Finally, a consultant is usually under no duty to treat the patient. He advises what should be done and gives the benefit of his experience. It is for the doctor to implement the advice.

Ten Suggestions on How to Avoid Being Sued

(1) Make use of every diagnostic aid. If you have an honest doubt about the correctness of your diagnosis, call in another dentist to confirm it.

(2) If you have any doubt about your ability to treat or operate, call in a consultant.

(3) In an extraction, particularly under a general anaesthetic, always take the appropriate measure to prevent a fragment of a tooth finding its way into the lung and, if you suspect a part of the root is still in the jaw, take an x-ray. And above all, tell the patient.

(4) Care should be taken in the choice of anaesthetics, with regard to a patient's idiosyncrasies to a particular anaesthetic. In appropriate cases, contact the patient's general physician before giving a general anaesthetic. Where the anaesthetist is not a physician, the dentist should make certain that he or she is duly qualified and capable.

(5) Careful records should always be kept.

(6) If a patient refuses to return for treatment, write him a letter pointing out the dangers.

(7) Keep your x-ray equipment in good condition, and make certain it is used properly. And use it whenever you feel a reasonably competent confrere would say it was indicated.

(8) A dentist should keep up to date by reading dental journals and new textbooks and, if at all possible, attending clinics frequently.

(9) Conservatism in prognosis and scrupulous honesty in advice and treatment will bring their reward. Unjustifiable promises often lead to disappointment and, sometimes, to malpractice actions.

(10) A dentist should not indulge in criticism of fellow practitioners, unless he really knows all the facts. Behind many lawsuits are the careless remarks of some dentist.

THE CORPS

"The Story of the Royal Canadian Dental Corps" has been received from the publishers. It is an attractively bound, 475-page volume, containing 12 illustrations, and three maps showing dental installations in the United Kingdom, Italy and Northwest Europe.

The history of Canadian military dentistry through the South African War, the Great War of 1914-19 and the Second World War to the end of 1956, is set out in detail. There are 15 appendices listing officers who served with the Corps from 1904-1956 with appointments, ranks, etc. Altogether, it is a comprehensive review of the part played by the dental profession in the Armed Forces of Canada.

The subscription price is $5.00, payable at par to the Director General Dental Services, National Defence Headquarters, Ottawa.

The official opening of the Corps' newest and most modernly-equipped clinic recently took place at R.C.A.F. Station, Trenton, Ontario.

Brigadier Wansbrough accompanied by Air Vice Marshal J. G. Bryans, Air Officer Commanding, Training Command, carried out the formal inspection. This new clinic is of brick and tile construction with five operating rooms, x-ray room, laboratory and all necessary facilities. The unit's laboratory for chrome-cobalt prosthetic appliances is also located in the building.

Two senior appointments have recently been made in the R.C.D.C. Militia. Lt.-Col. H. R. McLaren, Ottawa, was promoted to the rank of Colonel on August 1, 1956, and appointed Assistant Director Dental Services (Militia), Central Command, vice Colonel C. L. Strachan, London, Ontario. Lt.-Col. D. W. Henry, Montreal, was promoted to the rank of Colonel on November 1, 1956, and appointed Assistant Director Dental Services (Militia), Quebec Command, vice Colonel L. E. Kent, Montreal, Quebec.

Three senior R.C.D.C. officers have recently proceeded on leave pending retirement. They are: Colonel C. B. H. Climo, D.C.M., E.D., C.D.; Lt.-Col. J. K. L. McNally, C.D., and Lt.-Col. G. E. Shragge, C.D.

Colonel Climo was born in Saint John, N.B., but moved at an early age to Halifax where he received his early education. He served with the Canadian Field Artillery in France from 1916 until wounded in October 1917. He was awarded the Distinguished Conduct Medal.

Entering Dalhousie University after the war, he was graduated in 1923 and took up practice in Halifax. His interest in the Army was maintained by service with the 1st Halifax Coast Brigade, Royal Canadian Artillery. He was called out for duty to command Sandwich Battery, Halifax, in August 1939 and transferred to the Dental Corps in September of that year.

Colonel Climo was appointed Command Dental Officer, No. 3 Training Command, R.C.A.F in August 1940 and proceeded overseas in August 1942 serving in the United Kingdom, and Italy. Returning to Canada in 1947 he has since served in Halifax and Ottawa. Since February 1949 until his retirement on April 15th, 1957, he held the appointment of Deputy Director General Dental Services. Colonel Climo will continue to reside in Ottawa.

Lt.-Col. McNally was born in Gracefield, Quebec, and educated in Ottawa. Enlisting in the Dental Corps in January 1940 he was commissioned as a Quartermaster in June 1941. He served in Canada, United Kingdom and Northwest Europe, returning to Canada in 1945. Since July 1946 he has been stationed in Ottawa as Senior Procurement Officer.

Lt.-Col. McNally will continue his association with dentistry as the Canadian representative of H. D. Justi & Son.

Lt.-Col. Shragge was born in Kenora, Ontario, and graduated from the University of Toronto in 1922. Following his appointment in the Corps in September 1939 he proceeded overseas in June 1941 serving in the United Kingdom, Italy and Northwest Europe.

Lt.-Col. Shragge commanded No. 25 Canadian Field Dental Unit during its first year in Korea.

Since 1952 he has been Senior Operator in No. 11 Company, R.C.D.C., and employed at H.M.C.S. "Naden", Esquimalt, B.C. Col. Shragge will continue to be employed by the Department of National Defence.

Army Headquarters has announced the promotion of Lt.-Col. J. A. MacGowan to the rank of Colonel and of Majors J. G. Hamilton and A. T. Roger to the rank of Lieutenant Colonel. Captain B. J. H. Mar-

chant has been promoted to the rank of Major.

Col. MacGowan, a native of Tweed, Ontario, received his education in Toronto graduating from the University of Toronto in 1926. Appointed to the Corps in 1940 he proceeded overseas in 1943 serving in the United Kingdom with various R.C.A.F. establishments.

Col. MacGowan was Command Dental Officer at Winnipeg from 1950 to 1954 when he returned to Ottawa for employment at the Directorate. His new appointment is Command Dental Officer, Central Command, with headquarters at Trenton, Ontario.

Lt.-Col. Hamilton was born in Glasgow, coming to Canada as a child and grew up in British Columbia. He was commissioned in the Corps as a quartermaster in 1939 seeing service in the United Kingdom, Italy and Northwest Europe. Since the war he has served at Calgary and Ottawa. His new appointment is that of Senior Procurement Officer at the Dental Directorate.

Lt.-Col. Roger was born in Hamilton but received most of his education in Ottawa and graduating from the University of Toronto in 1937. Appointed to the Corps in 1939 he proceeded overseas in 1941 serving for some years with the maxillo-facial team at Basingstoke Neurological Hospital. On demobilization in 1945 he took an appointment with the Department of Veterans' Affairs but was re-appointed to the Corps in 1951. Since 1953 he has been employed at the R.C.D.C. School.

Major Marchant was born and educated in Montreal. Enlisting in the Corps in 1939 he was commissioned as a quartermaster in 1942 and serving in that capacity in several units. He spent a tour of duty in Germany in 1952-52 and since returning to Canada has been employed at Ottawa at the Dental Equipment Depot and the Directorate. Major Marchant will now command the Dental Equipment Depot.

Dr. V. M. McMaster of Inverness, N.S., has been appointed to the R.C.D.C. in the rank of Captain. Capt. McMaster received his B.A. from St. Francis Xavier University in 1943 and his D.D.S. from Dalhousie University in 1947. He has been posted for duty in No. 12 Dental Coy., Halifax. Capt. McMaster is married and has five children.

No. 54 Dental Unit CA (M)

Advice has been received at Unit H.Q. of the promotion of Capt. D. E. Long of No. 54 Dental Unit CA(M) to the rank of Major.

Major H. J. Chartrand, 2 i/c, and Lt.-Col. C. E. Woods, C.O. of 54 Dental Unit C.A.(M).

Major Long enlisted in the Canadian Army in July 1941. He received his Commission in March 1943 and was promoted Capt. in July 1944.

Posted overseas in Sept. 1944, he served in London (England) as adjutant No. 53 Coy. R.C.D.C. (Navy). He later served with H.Q. C.R.U. under ADDS. In Sept. 1945 he proceeded to Europe and joined No. 4 F.D. Dental Coy.

On his return to Canada, Major Long was released from the Regular Forces in March 1946. When No. 7 Coy. R.C.D.C. (RF) was formed in 1947, he enrolled as adjutant with that Coy., which is now No. 54 Dental Unit CA(M).

He is at present Training Officer for No. 54 Dental Unit CA(M).

Major Long was awarded the Coronation Medal in October 1953 and the Canadian Forces decoration in May 1956.

The promotion has been announced of Capt. C. Hunt, Adjutant of No. 54 Dental Unit CA(M) to the rank of Major.

Major Hunt jointed the Army in November 1939.

He was promoted to Second Lieutenant in May 1941.

Following his graduation from O.T.C. and Q.M. School he was promoted to Lieutenant.

He received his Captaincy in January 1942.

Major Hunt was posted to Command No. 2 Army Dental Stores and took the unit to France, Belgium and Holland.

He received his discharge in April 1946.

Major Hunt joined No. 7 Company, CDC (M) in October 1952 as Adjutant.

That unit was redesignated as No. 54 Dental Unit CA(M) in 1954.

THE PROVINCES

Alberta

Edmonton and District Dental Society

Dr. K. M. Johnson, president of the Canadian Dental Association, and Dr. D. W. Gullet, secretary, were guests at the March meeting of the Edmonton and District Dental Society. Dr. Johnson brought greetings from the national executive and gave an inspirational address outlining advances of the association.

Introducing Dr. Gullett, Dr. Alan Fee noted that for seventeen years our national secretary has made an annual visit to each society in the Dominion. Each year we look forward to the message he has to bring. Speaking on fluoridation of communal water supplies, Dr. Gullett said that a steady advance was being made in this form of preventive dentistry. He gave us food for thought in discussing problems associated with a national shortage of dentists. Dr. Gullett brought to our attention point number three of the twenty-three points adopted by the CDA, stating our position on national health insurance. This point emphasizes desirability of contributory payment by the recipient of dental service. He described a trend to a new kind of contract between dentist and patient where a group of patients, as in a labor union, engaged the services of a group of dentists. This involved problems of pricing the services rendered and of inventing machinery to administer the agreement.

Western Canada Orthodontic Study Club

The annual Spring Meeting of the Western Canada Orthodontic Study Club was held at the University of Alberta, Edmonton, on Saturday, March 2nd, 1957.

The scientific portion of the meeting took the form of a cleft palate seminar. Four excellent papers were presented, each one being followed by a discussion period.

The papers were as follows:

"Morphology of Clefts of Lip, Alveolar Process and Palate," by Dr. C. Castaldi, D.D.S., M.S.D.

"Orthodontic Approach to Cleft Palate Habilitation," by Dr. R. D. Haryett, D.D.S., M.Sc.D.

"Speech Disorders and Management of Cleft Palate Patients," by Dr. C. Castaldi, D.D.S., M.S.D.

"The Role of the Prosthodontist in the Cleft Palate Patients," by Dr. S. Fraser, D.D.S., F.A.C.D.

It was the opinion of the speakers and the members present that the best approach to cleft palate treatment is through teamwork of the various professions concerned with the problem. This would include the surgeon, the dentist, the social worker, the speech therapist, the orthodontist and the prosthodontist. A survey of the number of cleft palate patients being treated by the members present clearly indicated that the majority of our children afflicted with this deformity are not receiving orthodontic treatment. Furthermore, it is doubtful if they are receiving adequate dental care. This is most unfortunate, since these patients should receive the maximum of dental treatment in both the deciduous and permanent dentition and should receive early orthodontic supervision.

It is hoped that this seminar will stimulate further meetings embracing the other professions concerned.

Dr. J. S. Stewart Honoured

Dr. J. S. Stewart of Lethbridge, Alberta, was honoured by the conferring of an honorary doctorate of law degree, at the Spring convocation of the University of Alberta. William Robertson Davies of Peterborough, Ontario, playwright, editor, and vice-president of the Peterborough Examiner, was also accorded this distinction.

General Stewart was born at Brampton, Ontario, on May 18, 1877, and came to Edmonton in 1896 and attended the first Normal School to be established in what is now the Province of Alberta, and taught school at Namao Crossroads. In 1899 he indentured in dentistry in Edmonton. The same year he enlisted with the original Strathcona Horse and served in the South African War, in which he was decorated with the Queen's Medal and four bars.

Returning to Canada, he graduated from the Royal College of Dental Surgeons of Ontario in 1907 and was gazetted officer

Conference on Dental Education — University of Alberta, December 1956

commanding the 25th Battery Canadian Militia. He attained the rank of major in the following year.

He was elected to the Alberta legislature in 1911 and remained a member for fourteen years. On the outbreak of the First World War in 1914 he was authorized to raise the 20th Battery, Canadian Field Artillery, Canadian Expeditionary Force. In 1915 he was promoted to Lieutenant Colonel and went overseas in command of the 7th Artillery Brigade.

He served in France from January, 1916 until the end of the war, being appointed to command the 4th Field Brigade in 1917, and in the same year being promoted to brigadier-general as Commander Royal Artillery, 3rd Canadian Division.

He was twice wounded and twice mentioned in dispatches, and received the Croix de Guerre. The Distinguished Service Order was awarded him after the Battle of the Somme. In 1918 he was made a Companion of the Order of St. Michael and St. George.

In 1930 he entered Parliament as Conservative member for Lethbridge, serving until 1935. He has been prominent in public life in Lethbridge where he has been a school trustee.

Alberta Dentists Enjoy Bonspiels

Alberta dentists will have an annual bonspiel from now on if the enthusiasm which greeted the first one held at Red Deer Saturday, March 16th is any criterion. Ten rinks from Calgary, nine from Edmonton, two from Red Deer and one from Grande Prairie entered in a one day spiel which featured six end games and a point system of scoring, one point for each end won, four points for each game won, making it possible to score ten each game. The grand aggregate was won by Dr. S. B. Gerolamy from Edmonton who skipped a rink with Dr. A. Olsen third, Dr. S. G. Geldart second, Dr. W. Batuik lead. Other prize winners were the rinks of Dr. V. Lloyd, Dr. H. Brown and Dr. V. Kuzyk, all of Edmonton. Special mention must be made of Dr. C. Compton's rink which travelled all the way from Grande Prairie to play. Next year it is hoped that rinks from other outlying points will enter. Red Deer is the meeting place again as it is central.

The Alberta Dental Association sponsors the meet; this year Calgary was host. Prizes consisted of cups and curling tams. Much credit is due to Dr. A. Goodman and the Central Alberta Dental Association for making arrangements for ice and for the banquet at night and to Dr. V. Kuzyk, Edmonton; Dr. W. P. Hanna, Calgary, and Mr. M. Eagle, drawmaster, for planning. Everyone was delighted with the smoothness with which play proceeded. Over ninety-five people sat down at the banquet which concluded the day. Dr. W. P. Hanna was a very entertaining master of ceremonies. The assembled dentists voted unanimously to have the same kind of meet next year.

A one day 'spiel was held Wednesday, April 3, by the doctors and dentists of Edmonton. Eight medical and eight dental rinks competed. The winning physicians' rink skipped by Dr. R. K. Thomson and dentists' rink skipped by Dr. M. M. Duns-

worth played an extra end to break this tie, with the dentists coming out on top. These rinks were trophy winners for the year. Other prize winning rinks were those of:

Dr. B. M. Wheeler, medical rink, and Dr. V. Kuzyk, dental rink, who won first prizes, and Dr. E. F. Foy, medical rink, and Dr. E. Wilkinson, dental rink, who won consolation prizes.

British Columbia

Valley Dentists Meet in Vernon

Some 30 dentists from Valley centres attended the spring meeting of the Interior Dental Society, held recently at Orchardleigh Lodge.

Special guests were Dr. W. Ross Upton, executive secretary, and Dr. Wm. Miller, president of the Vancouver College of Dental Surgeons. Clinics were conducted by Dr. Ralph Yorsh, and Dr. Robert Crossley of Vancouver.

Due to slides on the highway between Vernon and Vancouver, guests arrived later than expected, but during their absence Dr. T. J. Hackie of Kelowna conducted a clinic on short notice.

Dr. B. A. Bishop of Vernon is president of the society, and Dr. J. E. Eby, secretary-treasurer.

Victoria and District Dental Society

On March 4 the society met in the Empress Hotel to welcome the C.D.A. President, Dr. K. M. Johnson, and the Secretary, Dr. D. W. Gullett, on their annual visit. After a very brief business session Dr. Harry Johns introduced Dr. Johnson who presented an address in which he laid stress on the need for the highest standard of ethics in a united profession and preparedness to meet the many challenges of the times.

Following this, Dr. Gullett was introduced by Dr. Jameson. Dr. Gullett spoke in his usual easy and convincing manner and among other interesting topics pointed out the inevitability of a government dental health scheme in one form or another and asked that the profession be prepared when the time came. The speakers were thanked by Dr. Cal Foote.

On March 18 Dr. George Russell introduced the guest clinician, Dr. J. Dille of the University of Washington, who gave a fascinating account of how new drugs and avenues of approach to research are opening up entirely different conceptions in the realm of psychosomatic medicine. His talk, "Psychosomatics and Tranquillizing Agents", was one to enlarge the listener's outlook and awaken interest outside the immediate problems of dental practice. This it did admirably. Dr. Dille was thanked by Dr. C. B. Jameson.

Prince George and District Dental Society

New officers for 1957:

President—Dr. J. A. Thorsness

Vice President—Dr. D. E. Waller

Secretary-Treasurer—Dr. H. J. Hocking

The Prince George dentists took part in Dental Health Week by putting on several interviews and spot broadcasts over the local broadcasting station. Several favorable public comments were made about them.

Upper Island Dental Society

This new Executive took office:

President — Fred Lind, Courtenay

Secretary-Treasurer — H. G. Pettapiece, Parksville

Program Chairman — H. Dombrowski, Port Alberni

The retiring president, Dr. Garnet Montgomery, reported that the year was successful, chiefly through the efforts of Dr. Dombrowski who arranged the programs. The average attendance was 90 per cent with the Albernis averaging 96 per cent. The highlight of the year was the June Ladies' Day when an attendance of 98 per cent was reported.

Vancouver and District Dental Society

It was Mardi Gras indeed on March 5 when the C.D.A. officials paid their annual visit and were entertained at a dinner dance in the Panorama Roof of the Hotel Vancouver. Outside, from the windows in the sky, glittered the city's myriad lights, and inside the scene was gay and colorful.

Dr. Don Gullett was introduced by Dr. Harold Cline, who averred that the Secretary of the Canadian Dental Association had become an international figure in dentistry.

In his address Dr. Gullett dealt mainly with health insurance. "Whether we like it or not we are in the third stages of a health insurance movement which is a planned development of five stages. In all the plans there is divided responsibility with no one responsible for prognosis. Are the members of the dental profession going to administer their own affairs, or let someone else do it?"

Introduced by Dr. Wm. Miller, Dr. Ken Johnson, President of the C.D.A., brought greetings from the national body, extended an invitation to the convention in Winnipeg,

and stated that the Grey Cup would certainly go to Winnipeg next year.

Earlier in the day the two officials paid a surprise visit to a meeting at the City Hall where a phalanx of food faddists and others were opposing fluoridation. A plebiscite is being held in December and Dr. Gullett stated that between now and then the city will have the greatest flood of spurious literature it has ever seen. Dr. Johnson felt confident that when the battle was over fluoridation would win. "No conscious effort is ever completely lost."

D. H. M.

Ontario

Niagara Peninsula Dental Association

Dr. James Sim was elected president for the 1957-58 session of the Niagara Peninsula Dental Association at their meeting held recently at the Sheraton Brock Hotel, Niagara Falls.

Also elected were: vice-president, Dr. D. R. Copeland, Grimsby; secretary, Dr. A. Jarvis, St. Catharines; treasurer, Dr. E. S. Walker, Port Colborne; and directors, Dr. G. A. Oswald, St. Catharines, and Dr. C. M. Smelsky, Welland.

Past president is Dr. R. A. Tranter, Niagara-on-the-Lake.

Lambton County Dental Society

Dr. Michael Lucyk of Toronto addressed the Lambton County Dental Society on March 4th, on the subject "dentogenics". Dr. Lorne Brunton, president of the society, presided and welcomed as guests of the society, six visitors from the Thumb Dental Society, in Michigan.

Sudbury and District Dental Society

A dinner meeting of the Sudbury and District Dental Society was held on March 21st in Memorial Hall to install the 1957 executive. Dr. G. Copeland is the new president of the society. The secretary-treasurer is Dr. W. Cook and the immediate past-president, Dr. G. Tokaryk.

The speaker of the evening was Mr. J. J. Olscamp, and his subject was Wills and Succession Duty Problems.

The Sudbury and District Dental Society in cooperation with the Dental Public Health Committee of the Ontario Dental Association publicized Dental Health Day in Sudbury and district.

The Sudbury Daily Star, CKSO-TV, CKSO and CHNO radio stations were contacted by a public health committee concerning publicity for Dental Health Day, Feb. 6th.

The committee consisted of Drs. Sutherland, Tokaryk, Donnelly and Copeland. Dr. Sutherland is the Dental Health Officer for Sudbury.

Editorial comments were made in the Sudbury Daily Star. Drs. Chalifoux, Copeland, Donnelly and Sutherland were on a fifteen minute broadcast from CKSO-TV and radio stations.

A 15 minute French program on Dental Health Day was broadcast from CHNO consisting of Drs. Chalifoux, Lavoie, Laberge and St. Aubin.

It was the first attempt by the local society for such publicity of Dental Health Day. The cooperation from all was excellent and the public comment was favourable.

G. P. C.

London and District Dental Society

The annual medical-dental night of the London and District Dental Society held on March 13th heard three fine guest speakers from The Hospital for Sick Children, Toronto, describe methods of treatment for "The Handicapped Child".

Illustrating their talks with coloured slides and movies, Dr. G. W. Dix, medical anaesthetist, and Dr. H. W. Sorenson, dentist, explained the dental treatment of cerebral palsied children under general anaesthetic. All dental work under general is done on the operating table.

Dr. D. J. E. Mitchell, orthodontist, in discussing the cleft-palate research work at the hospital, told how a team of plastic-surgeons, orthodontists, paediatricians, speech therapists, geneticists and dentists are obtaining encouraging results with the cleft-palate cases. Dr. Mitchell emphatically stressed that the family dentist must do everything in his power to maintain both the deciduous and permanent dentition. Early adequate operative dentistry is the major prerequisite for the later orthodontic movement of the maxillary segments in cleft-palate cases.

The physicians and the dentists present were most impressed with the benefits that can be derived from medical-dental cooperation.

D. E. W.

Toronto Academy of Dentistry

The third and final stated meeting of the 1956-57 series of the Academy of Dentistry, Toronto, was held in Osler Hall on Thursday, March 21st with the capable president, Dr. Harvey Milburn, performing his last official duties.

Dr. R. W. Marshall, newly-elected President of the Academy of Dentistry, Toronto, receives the gavel from his father Dr. T. R. Marshall, a past president of the Academy. Dr. Marshall Jr. ascended to the presidency eleven years after graduation as did his father twenty-five years before him.

Only three of the planned four fifteen minute informative papers were presented. First was Dr. C. H. Moses whose subject was "Internal Precision Attachments for Partial Dentures". Next was Dr. P. T. Smylski who discussed "Sutures". The final paper was by Dr. J. B. Pepper on "Crown and Bridge with Hydro Colloid Technique". All papers were concise and well illustrated. The fourth paper was to be given by Dr. J. E. Speck on "Periodontal Packs" but unfortunately for the audience Dr. Speck was ill and unable to attend the meeting. The clinicians were thanked by president elect Dr. W. A. Weir.

Dr. J. B. King warmly inducted Dr. H. Milburn into the past presidents' group, bestowing upon him his badge of honor and the sincere thanks of the Academy members for his highly creditable year.

Dr. Milburn graciously acknowledged the support given him by his capable council and all the groups affiliated with the Academy of Dentistry.

Dr. T. R. Marshall as a past president and as father of the incoming president, Dr. R. W. Marshall, counselled and welcomed son Bob to the president's office. President Bob respectfully expressed his appreciation to his father.

Council members for 1957-8 were introduced and a brief outline of the plans for the new year were given. The meeting adjourned and light refreshments were served.

The 1957-8 slate officers reads as follows: President, Dr. R. W. Marshall; President-elect, Dr. William A. Weir; Secretary, Dr. J. A. Bigelow; Treasurer, Dr. V. A. Herron; Councillors, Drs. F. Froud, A. E. Histrop, J. Mullett, S. Mednick, R. D. Leuty and A. E. K. Hogg.

E. R. B.

Installation Remarks of Dr. T. R. Marshall

Mr. President—

Thank you for the opportunity to assist in the installation of my son Bob as president of our Academy. It is just 25 years ago this month that I was accorded this same honour and in many respects I know how privileged he feels tonight on entering the threshold of his term of office.

It's quite an honour to be elected the president of this Academy—representing as it does some 1,000 dentists in Greater Metropolitan Toronto. It's only human to feel important and to bask in the limelight of goodwill of your colleagues. The prestige naturally flatters your ego and could make your hat fit too tightly. However, I trust this will not happen and indeed I feel quite sure it won't happen with our president-elect.

Bob — With the honour goes *privilege* and *responsibility*. The privilege of service to your colleagues and through them to the community in which we all serve and live.

You know—we dentists enjoy a peculiar privilege by virtue of being professional people. It is the privilege of professional respect from our fellow citizens; we are in the same category with teachers, surgeons, ministers, physicians and lawyers —we are respected because we can do things for people that are of great importance in their lives. As dentists, we are expected to deal with certain of their health problems about which they know very little—so they trust us as professional people. This respect can increase or decrease depending on our worthiness of their trust; depending on whether our interest is primarily in their welfare or in our materialistic gain. Respect depends on where we place the emphasis.

Dr. Ernest Caldwell, dean of faculties in the University at Atlanta, Georgia, has this to say of professions—"The good professional is an amateur. An amateur is a man who does something for the love of doing it and the best professional man is a man who is doing what he loves to do because human beings need what he has to give."

So I suggest to you Mr. President-elect, there is always constant need of giving some thought to promoting professional respect, by our conduct, if we would maintain a high place among the professions. It can be so easily lost by deterioration of professional ideals.

There is another privilege that I should like to mention. It is a personal one and it is this; you will have the opportunity of being a bigger man because of your experience as president. However, I must warn you that the breadth of your stature depends on what you give of your talents and of yourself to this leadership that is entrusted to you. An organization of which I am proud to be a member has the following motto – "He who serves best profits most."

It isn't so much what you will have accomplished at the end of your year—that is important—but more important is the fact you tried your best. It is the exercise of trying that makes you a man.

This is an important occasion for both of us. I would like to mark the event with a little memento that I hope may still be here when you and I are forgotten. I would like to present you with this "Gavel" for your use as a president and in presenting it to you I present it to the Academy for the use of your successors in office when your term expires.

In the Arts, the Gavel is a symbol of labour. It is an instrument commonly used by craftsmen to apply their manual skills in executing designs conceived by the heart and mind.

In the hands of a presiding officer it is the symbol of authority; it is also a symbol of labour and effort. It is used to call your fellow members to order for a purpose—that purpose may be to plan and organize progressive undertakings or perhaps to execute preconceived and prepared plans to achieve an objective. Whatever the purpose of its use, it presumes work to be done. Throughout this year may it always remind you of this fact.

In initiating this Gavel, I trust you will use it thoughtfully and with honour as you give direction to this, our Academy, during the next year.

It is my honour and privilege at this time to install you as our new president. May I be the first to congratulate you and wish you the best of luck.

Quebec

Montreal Dental Club

The monthly dinner meeting of the Montreal Dental Club was held in salon A of the Queen's Hotel on Thursday, March 18, 1957. Dr. E. T. Cleveland presided.

Dr. Cleveland announced that a letter of sympathy, on behalf of the club members, had been sent to Dr. G. D. Armstrong on the recent death of his mother, and that Dr. J. Abraham was doing extremely well in the Queen Mary Veterans' Hospital following an operation necessitated by an intestinal condition.

On April 15, 1957, the next monthly meeting of the Montreal Dental Club will be held, at which time Dr. MacLachlan of Ottawa will speak on Esthetics in Dental Restorations.

Dr. G. Dundass introduced the guest speaker, Mr. J. T. Staddon, manager of Professional Pensions, who talked on Pension Provisions and Tax Returns for the Professional Man. Mr. Staddon firstly discussed aspects of Mr. Harris' recent budget pertaining to the deductibility for pension plans for professional men, and then discussed in detail the three main types of contracts available to them. These were:

(1) Approved retirement annuities.

(2) A modified life assurance policy.

(3) An endowment or pension assurance contract.

Dr. Burbank thanked the speaker.

W. D. S.

Montreal Endodontia Society

On March 4 a meeting of the Montreal Endodontia Society was held in the Dental

lecture room of McGill University. The speaker of the evening was Dr. Georges Pelletier, a member of the department of Periodontia of the University of Montreal. His subject was "The Theory of Ionophoresis". Dr. Pelletier described a series of experiments that he performed to determine the disinfectant action of the ionophoresis process. At the conclusion of his talk an enthusiastic discussion took place amongst the members present.

F. V.

Saskatchewan

Saskatchewan Dental Association

The annual meeting of the Saskatchewan Dental Association was held in the Bessborough Hotel, Saskatoon, on March 9, under the chairmanship of Dr. Norman Godfrey, President, of Prince Albert. This date was chosen to coincide with the annual visit of the President and Secretary of the Canadian Dental Association — Dr. Kenneth M. Johnson, of Winnipeg, and Dr. Don W. Gullett of Toronto.

The report of the executive, which has held office for the past two years, showed considerable progress, with the development of some projects suggested by their predecessors and some new innovations. A Provincial convention was held in August, 1956, at Waskesiu, in the Prince Albert National Park. This was the first one since 1938 and the attendance was quite encouraging. A well balanced programme of Clinics, business sessions and recreation rounded out an enjoyable three days. The Committee was pleased to have Dr. Johnson, President of the C.D.A. as a guest at this meeting. It is proposed to continue the practice on alternate years with The Western Canada Dental Society. The Association sponsored Saskatchewan Dental Services Incorporated, which provides a post-payment plan for Dental services and is the first plan of the kind to be instituted in Canada. Three standing committees were set up in convenient centres to study various dental problems and to collaborate with similar committees of the C.D.A.

The Treasurer's report, presented by Dr. N. R. Fedirko, showed the Association to be in a healthy financial condition, in spite of heavy committments during the past two years.

The committee on Dental Public Health, under the chairmanship of Dr. Fred. Wihak, of Regina, reported on the success of Dental Health Day, which was conducted with practically no financial outlay. Even small outlying communities showed considerable activity and the co-operation of the Press and Radio was excellent. Resolutions were presented concerning bursaries similar to those now available in Manitoba and also in regard to the establishment of a basic preventive service within the Province. These were approved and referred to the new executive for appropriate action.

Dr. Ted. Bradley, of Moose Jaw, presented the report of the committee on Health Insurance Studies, giving details of the various treatment services being provided by the Department of Public Health and by several Health Regions.

Dr. Alex. Fernet, of Saskatoon, chairman of the committee on Public Relations and Mediation, presented a plan for regional committees to deal with patient-dentist disputes and also offered suggestions for avoiding misunderstandings on the part of the patient.

Dr. H. S. Locke, chairman of the Board, and Mr. Jackson, administrator of Saskatchewan Dental Services, reported favorable progress, although the volume of accounts processed was somewhat short of that necessary for economical operation. The Association gave further endorsement of the plan and assurance of continued financial support.

The new officers, who will hold office for two years, are President — Dr. Ben Bookhalter, 1st Vice-President—Dr. Fred. Wihak, 2nd Vice-President — Dr. Douglas Parker, Secretary — Dr. Carl Bolen, and Treasurer — Dr. Henry Kinzel, all of Regina.

Splendid arrangements were made by the Saskatoon Society for the entertainment of those present. At a luncheon presided over by Dr. Bob Reid, 1st Vice-President of the S.D.A., Dr. Don Gullett gave another fine address on the condition of dentistry in Canada, with suggestions for action to be taken in view of possible developments. Dr. L. J. D. Fasken was presented with an Honorary Life Membership in the Association, in recognition of his exceptional service to the profession, through fifty years as Secretary-Registrar of the College of Dental Surgeons of Saskatchewan. He also received a purse of money contributed by the members of the profession.

In the evening, a social hour, including the ladies, was followed by a banquet, in charge of Dr. Herb. Coburn, President of the Saskatoon Society. Dr. Johnson, President of the Canadian Dental Association, was the chief speaker.

Regina Dental Society

At the Feb. 27 meeting of the Regina and District Dental Society, Dr. L. J. D. Fasken, retiring secretary of the College of Dental

Surgeons of Saskatchewan, was made an honorary life member of this society and was presented with an engraved pipe holder and pipe.

These presentations were made by the president of the Canadian Dental Association, Dr. K. M. Johnson of Winnipeg.

Dr. M. J. MacDonell, Saskatoon, and Dr. A. J. Brett, Regina, gave Dr. Fasken's history and accomplishments, as well as a few items from his "past".

Guest speakers were Dr. K. Johnson, President, and Dr. D. Gullett, Secretary, of the Canadian Dental Association, who discussed the problems facing Canadian Dentistry today.

This meeting was well attended by society members, as well as guests from Prince Albert, Saskatoon, Swift Current and Moose Jaw.

PROGRAMME

CANADIAN SOCIETY OF ORAL SURGEONS

Royal Alexandra Hotel — Winnipeg, Manitoba

June 23rd, 1957, Sunday

9.00 a.m.	Address of Welcome of C.D.A. by President.	Dr. K. M. Johnson, Winnipeg, Manitoba.
9.30 a.m.	Movie — "General Anaesthesia in the Office."	Dr. J. H. Johnson, University of Toronto.
10.30 a.m.	Guest Speaker — Sponsored by the Canadian Society of Oral Surgeons to the Canadian Dental Association Convention. "Temporomandibular Joint."	Dr. D. Bellinger, Saginaw, Michigan.
11.30 a.m.	"Prognathic Problems".	Dr. P. Smylski, Hamilton, Ontario.
12.15 p.m.	Luncheon and Business Meeting.	
2.00 p.m.	"Surgical Procedures for the correction of Prognathic, Micrognathic, and Laterognathic conditions".	Dr. H. Simmons, Vancouver, B.C.
3.00 p.m.	"General Anaesthesia for the Ambulatory Patient".	Dr. G. Chesney, Montreal, P.Q.
4.00 p.m.	"Surgical Prognathic Correction".	Dr. J. Freeman, Winnipeg, Manitoba.
4.30 p.m.	Subject to be announced.	Dr. F. Smith, Vancouver, B.C.

IN MEMORIAM

Herbert Irvine — Dr. Herbert Irvine of Lindsay, Ontario, died in March at the age of 78, at St. Petersburg, Florida.

Born in Rosedale, Ontario, Dr. Irvine graduated from the Royal College of Dental Surgeons in 1903. He retired from practice 10 years ago.

Dr. Irvine has been a member of Lindsay Town Council, and represented the Council on the Board of Education. He was on the Board of the Royal College of Dental Surgens and was president in 1933. He was also a member of the board on the senate of the University of Toronto.

He was a member of the United Church of Canada, and was affiliated in Lindsay with the Kiwanis Club, and was also a charter member and past president of Lindsay's Progress Club.

Surviving are his wife, Mary, and one brother, Matthew D. Irvine of Vancouver.

Charles Ogilvie Wood — Dr. Charles Ogilvie Wood died suddenly in Victoria, B.C.

Dr. Wood was born in Edinburgh, Scotland, in 1882 and graduated from Edinburgh Royal College of Dental Surgeons in 1905. He came to Winnipeg, Manitoba, in 1913 and practised dentistry there until he retired in 1949 to live in British Columbia. He is survived by his widow, Grace Alice; a son, Charles, Toronto; a sister, Mrs. W. Burge, Edinburgh; a granddaughter.

Funeral service, followed by cremation, took place March 2nd.

J. E. Laforest — Dr. J. E. Laforest died in Quebec on February 14, 1957, at the age of 62.

Dr. Laforest was born at St. Alexandre de Kamouraska and studied at the colleges of St. Anne-de-la-Pocatiere and Levis. He graduated in dentistry from Laval University in 1919. He first practised his profession at Chandler near Montmagny and later established his permanent practice in Quebec in 1921.

Dr. Laforest was also greatly interested in the fur industry in Quebec and in 1941 became the President of the Cooperative des Producteurs de Fourrures de Québec, a post which he held until his death.

Dr. Laforest is survived by his wife.

A notice of the death of Dr. Richard N. Berry was published in the December 1956 issue of the Journal. Because of lack of information only a few lines were shown. More information has since been received and is written hereunder.

Richard N. Berry — Dr. Richard N. Berry died at Caledonia, September 17, 1956.

He graduated from the R.C.D.S. in 1898 and practised in Caledonia for many years, taking part in all the town's activities.

He was in the town Council for a number of years and Warden of Haldimand County in 1923. He was also a provincial member of Parliament for two terms and a member for many years of the Caledonia Fair Board.

Besides his many other activities he devoted much time to growing tobacco in the Simcoe district.

His wife predeceased him four years ago. Surviving are a son, Nixon, of Toronto, and a daughter in Toronto and two grandchildren.

Arthur B. Kennedy — Dr. Arthur B. Kennedy of St. John's, Newfoundland, died suddenly at his home recently at the age of 49.

Dr. Kennedy was educated at St. Bonaventure's College, Loyola College in Montreal, and Villa Nova, Philadelphia. He graduated in dentistry from Georgetown University, Washington, D.C., and returned to St. John's to practise dentistry in the early 1930's.

He was vice-chairman of the Newfoundland Dental Board, and a past president of the Newfoundland Dental Association. Dr. Kennedy was well known in sports circles; he played hockey and football for St. Bon's

in both the inter-collegiate and city league. It was he who a few years ago donated medals for the amateur race in the annual regatta. Also an avid angler, he used to spend some time each year in the Gander area.

Surviving are his wife, Edith, and a daughter, Mary Lynn, his mother, Mrs. T. J. Kennedy, one brother, Dr. B. J. Kennedy of St. John's and two sisters, Mrs. F. McNamara Jr., St. John's and Mrs. B. L. MacDonald, Toronto.

Aubrey Seymour Doyle — Dr. Aubrey Seymour Doyle of Vancouver, B.C., died on March 5th, 1957, after a brief illness. He was 66 years of age.

Dr. Doyle was born in Carman, Manitoba, and went to British Columbia 60 years ago, and practised dentistry in Vancouver for 45 years.

A graduate of the Oregon School of Dentistry in 1914, he practised continually in Vancouver from 1918 until his death.

Dr. Doyle is survived by his wife, Gladys May; two sons, Leslie S. and Gerald R., both of North Vancouver; three daughters, Mrs. J. E. Damer, Vancouver; Mrs. S. H. Matthews, North Vancouver, and Mrs. D. W. Pitman, Port Mellon, and nine grandchildren.

Robert James Vance — Dr. Robert James Vance of Waterdown, Ontario, died in March in the Hamilton General Hospital. Born at Bullock's Corners in 1876, he had lived in Waterdown since 1878, where he received his public and high school education.

At the age of 18 Dr. Vance attended the Model School in Hamilton, and later taught in Dundalk for three years. After spending some time at the Normal School in Toronto, Dr. Vance then taught for three years in Binbrook and Carlisle. Following this he worked with the Continental Life Insurance Company until 1906, when he entered dental college in Toronto. From his graduation in 1909, until just recently, he practised in Waterdown.

Dr. Vance was an active member of the Grace United Church, Waterdown, and belonged to the Waterdown Lodge, AF and AM, No. 357.

Surviving Dr. Vance is his wife, Gertha.

Grant Fraser — Dr. Grant Fraser died on April 3rd, 1957, in Belleville General Hospital.

Dr. Fraser was born in Odessa in the year 1889 and received his early education in Napanee, Ontario, and graduated from the University of Toronto in 1914. In 1914 he practised with Dr. C. C. Wash of Kingston and then in 1915 moved to Madoc, Ontario, where he practised until his death.

He was a Past Master Blue Masons, Chapter Preceptory Scottish Rite; Rameses Shrine I.O.O.F.; Orange Rebecca; Eastern Star; Potentate Representative to Rameses Shrine.

Surviving Dr. Fraser is his wife Lola.

J. W. Rochette — Dr. J. W. Rochette died suddenly on March 17th at the age of 73.

He was born at Nicolet and graduated from the University of Montreal and had practised dentistry in Montreal since that time.

He was one of the founders of the Ste. Helene section of the Society of St. Vincent de Paul, and was a member of the Knights of Columbus.

Dr. Rochette is survived by his wife, two daughters, Mme G. Dureault and Mme R. Constantineau and a son, Dr. C. Rochette.

Marvin Logan Craig — Dr. Marvin Logan Craig, of Toronto, died on April 9, 1957.

He was born at Grand Valley, Ontario, in 1906 and received his early education in Grand Valley and Orangeville, and graduated from the University of Toronto in 1930.

During World War II Dr. Craig served as Lieutenant — 7th Cavalry Field Ambulance — Dental Associate.

Surviving are one sister and a nephew.

Donat Bordeleau — Dr. Donat Bordeleau died Wednesday, March 13th, at Jacksonville, Florida, while on vacation. He was 57 years of age.

Dr. Bordeleau is survived by his wife, a daughter, Mme J. Gougoux, and a son, M Yves Bordeleau, and six grandchildren.

Alcide Mondor — Dr. Alcide Mondor died on March 10th, 1957, at the age of 56. He was the son of the late Aristide Mondor and Mme Mondor (Louise Demers).

Dr. Mondor is survived by a brother, Edouard Mondor, and a sister, Imelda Mondor.

Gershom P. Howard — Dr. Gershom P. Howard died on April 14th, 1957 in Sunnybrook Hospital, Toronto. Dr. Howard graduated from the University of Toronto in 1900 and retired from practice a number of years ago.

Dr. Howard was pre-deceased by his wife, Margaret Rose, and he is survived by a daughter, Frances.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba.	June 23rd—26th
1958	Montreal, Quebec.	October 5th—8th
1959	Halifax, Nova Scotia.	June 21st—24th
1960	Ottawa, Ontario.	September
1961	Saskatoon, Saskatchewan.	June 25th—28th
1962	Toronto, Ontario.	May
1967	Toronto, Ontario. *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	*Function*	*Location*	*Officer*	*Address*
May 16-18, 1957	British Columbia Dental Assoc. Convention	Empress Hotel, Victoria, B.C.	Dr. Ross Upton	Exec-Secretary, 217 Medical-Dental Bldg., Vancouver 1, B.C.
May 29-June 1, 1957	American Academy of Dental Medicine Annual Meeting	Hotel Sheraton Plaza, Boston, Mass.	Dr. R. Diamond	100 Boylston St., Boston, Mass.
June 10, 11, 12, 1957	Maritime Dental Convention	Moncton, N.B.	Dr. G. Cormier	120 Queen St., Moncton, N.B.
June 23, 1957	Canadian Society of Oral Surgeons	Royal Alexandra, Winnipeg, Man.	Dr. J. Passalis	313 Medical Arts Bldg., Winnipeg, Manitoba.
Aug. 3-4, 1957	Fifth Annual Roentgenology Workshop	Vancouver, B.C.	Dr. O. F. Wright	Secretary-Treas., 4014 Cambie St., Vancouver, B.C.
Aug. 19-22, 1957	Pacific Coast Dental Conference	San Diego, California	Dr. C. W. Gilman, Secretary	219 E. 8th Street, National City, Calif.
Aug. 28-Sept. 2nd, 1957	European Orthodontic Society Meeting	Geneva, Switzerland	Prof. E. Fernex	1 Place du Port, Genève, Suisse.
Sept. 7-14, 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy		Canadian Dental Assoc., 234 St. George St., Toronto
Nov. 1-2, 1957	American Academy Gold Foil Operators	Miami, Fla.	Capt. R. B. Wolcott	Navy Dent. Tech. School, Naval Training Center, San Diego, Calif.

SHORT GRADUATE COURSE

TUFTS UNIVERSITY —Course in Periodontology October 7–October 11, 1957—Tuition—$150.00.

Apply: Director of Graduate & Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Mass.

Volume 23
Numéro 5
Mai 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Recherches sur les amalgames dentaires et leur application pratique†

par RALPH W. PHILLIPS,* M.S., Indianapolis

Plus que toute autre substance utilisée dans le domaine dentaire, l'amalgame se prête bien aux recherches tant à la clinique qu'au laboratoire. Les relations que ce matériel possède avec la chimie et la métallurgie, ses propriétés physiques et sa facilité de manipulation en font un objet d'intérêt de premier plan. Ainsi, quoique l'amalgame ait servi comme matériel d'obturation depuis plus de cent ans, on ne connaît encore qu'imparfaitement les réactions chimiques qui amènent son durcissement. Il en est ainsi de presque tous les facteurs qui règlent sa manipulation; ils doivent être étudiés plus à fond. Le comportement étrange de ce matériel, qui est d'un usage courant en dentisterie opératoire, incite les chercheurs à le connaître davantage et à trouver des explications pour ses réactions.

A l'opposé de ce qu'on croit de prime abord, il s'est fait, au cours des dernières années, des progrès immenses dans les recherches sur l'amalgame et sur les facteurs qui déterminent ses propriétés et son utilisation en clinique. Ce travail a fait l'objet de recherches de base dont les résultats devraient améliorer les propriétés du matériel lui-même et conséquemment son rendement clinique.

Par exemple, la diffraction radiologique a réussi à fixer l'identité des composés qui s'élaborent au cours du durcissement de l'amalgame et la part exacte que joue le mercure dans ces réactions compliquées. Ces phénomènes sont aussi étudiés à l'aide d'épreuves de conductibilité électrique. Des recherches ont aussi entrepris d'évaluer le degré de pénétration des différents ions de l'alliage dans l'émail et la dentine. Enfin d'autres chercheurs ont abordé le vaste problème des manifestations galvaniques qui se produisent dans la bouche et de leurs relations

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†Journal de l'Association dentaire américaine, mars 1957.

avec l'amalgame et les autres matériaux d'obturation métallique.

Le cadre de cet article ne permet pas de discuter et de juger à leur mérite ces travaux de recherches fondamentales, mais il faut souligner que les progrès de la clinique se baseront sur les constatations révélées dans les laboratoires d'expérimentation. Il s'agira ici de traiter des données les plus récentes qui ont une influence directe sur les reconstitutions des cavités, à la clinique.

Cause d'échecs

On se demandera encore longtemps quel est le meilleur matériel à obturation. Il vaudrait mieux faire porter la discussion sur les facteurs qui font de l'amalgame, de l'or coulé ou de l'or adhésif de bons matériaux pour l'obturation des dents. L'amalgame est une substance excellente pour obturer les dents; cependant, tous les jours, les dentistes peuvent voir des amalgames qui n'ont pas donné ce qu'on s'attendait d'eux. Tantôt, ce sont des récidives de carie, des désintégrations d'obturations, tantôt des contractions, des expansions ou des corrosions. Roper[12] a fait une analyse des causes des échecs d'obturations constatés dans le Corps Dentaire. Healy et Phillips[13] ont étudié au delà de 1,526 amalgame défectueux et ont trouvé que 56 pour cent de ces échecs étaient causés par de mauvaises préparations des cavités et 40 pour cent par une préparation incorrecte du matériel. Leurs statistiques et celles de Roper indiquent que la réussite ou l'insuccès de cette substance dépendent du dentiste lui-même et que la taille rationnelle des cavités et la préparation adéquate du matériel à obturation sont essentielles au bon rendement de l'amalgame. Cet article traitera surtout du 40 pour cent des insuccès qui sont occasionnés par une manipulation défectueuse de ce matériel.

L'alliage

Depuis l'apparition des spécifications no 1 de l'Association dentaire américaine, les alliages de qualité inférieure sont disparus du marché. De sorte qu'on peut dire qu'aujourd'hui les insuccès de l'obturation en amalgame ne peuvent plus être attribués à un matériel défectueux, mais bien à l'emploi fautif d'une bonne substance.

De nos jours, le dentiste achète son amalgame en se basant sur son goût personnel: temps exigé par l'amalgame pour durcir, facilité de sa manipulation, de sa sculpture, etc.

Depuis quelques années, les manufacturiers sont portés à fabriquer une mouture plus fine pour les alliages et les résultats sont meilleurs. Quand la restauration est terminée, sa masse se compose de zones d'alliage entourées de mercure, d'autres de mélanges d'étain-mercure et d'argent-mercure; la grosseur des cristaux de l'alliage a donc une influence sur la dureté de l'amalgame quand il est sculpté. L'illustration no 1 illustre bien cette différence; elle compare une paroi d'amalgame bien trituré et constitué d'alliage à grains gros avec une autre formée d'amalgame où les cristaux sont petits. Une surface formée de petits cristaux d'alliage est certainement plus lisse; elle est moins susceptible de se corroder et de perdre son poli; de plus, un tel alliage s'adapte mieux aux parois de la cavité. C'est la logique même. Crowell et Phillips[14] ont démontré qu'à la faveur de bonnes conditions de fabrication, il y a un rapport étroit entre la résistance et le volume des particules d'amalgame — plus le grain est fin, plus la résistance est grande, une heure et vingt-quatre heures après son insertion. Ainsi, l'alliage à grains fins a donc plus d'avantages. Une poursuite des travaux entrepris par Jarabak[15] et Smith[16] dans ce domaine permettrait d'établir les rapports qui existent entre le volume des particules et les autres propriétés physiques de cette substance.

Effets du mercure

Plus que tout autre facteur, le mercure qui séjourne dans l'obturation exerce une profonde influence sur les propriétés physiques de l'amalgame. Les recherches entreprises en 1919 par Gray[17], qui montraient que la teneur de mercure d'un

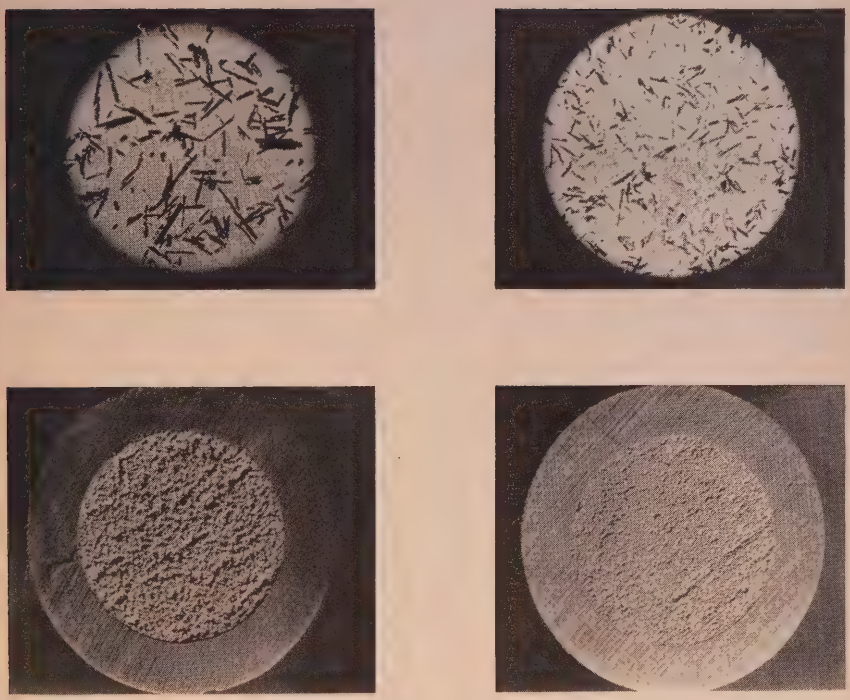

FIG. 1 — Surfaces sculptées d'amalgames préparés avec des alliages à cristaux fins et à cristaux gros.

amalgame avait un rapport direct sur sa résistance, ont été confirmées par des travaux récents[18-19] sur la question; ces nouvelles données augmentent singulièrement nos concepts sur le problème. (Quelques communications publiées plus tôt sur cet aspect des obturations d'amalgame sont mises en doute parce que les procédés chimiques utilisés pour calculer les quantités de mercure n'étaient pas scientifiquement justes.)

L'analyse[18-20] d'un grand nombre d'obturations a révélé que la quantité de mercure contenue dans ces amalgames varie considérablement; elle atteint parfois 70% de la masse. Le mercure est toujours plus abondant aux parties excentriques de l'obturation (parties faibles) habituellement dans la proportion de 2 à 3 pour cent. On s'entend pour dire qu'il n'y a pas de danger de tenir la teneur de mercure jusqu'à environ 50 pour cent. Au-dessus de cette proportion, cependant, l'amalgame perd sérieusement de sa résistance et cette diminution de sa solidité augmente en rapport avec le contenu de mercure laissé dans l'amalgame. Par exemple, un alliage ordinaire[19] contenant une proportion de 55 pour cent de mercure résiste à une pression de 40,000 livres par pouce carré; en augmentant sa teneur de mercure à 59 pour cent, sa résistance s'abaisse à 18,000 livres par pouce carré. Une résistance de 18,000 livres par pouce carré n'est pas suffisante pour supporter le choc de la mas-

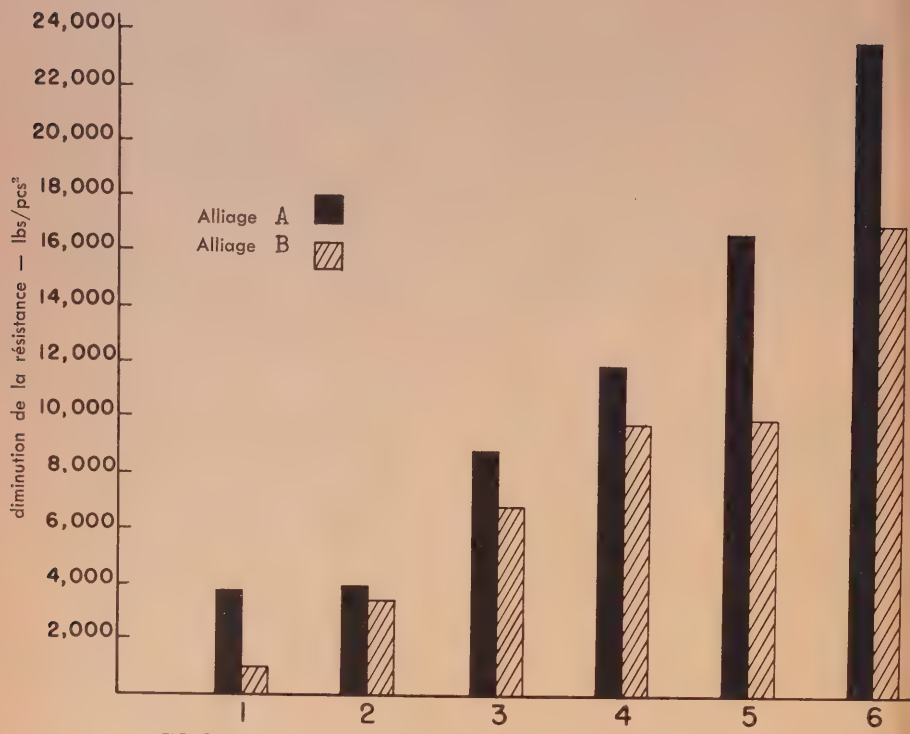

FIG. 2 — Temps écoulé entre la trituration et la condensation — en minutes

tication. Malheureusement, il y a beaucoup d'obturations en amalgame qui renferment du mercure à une proportion qui dépasse 55 pour cent.

Sachant que le mercure laissé dans l'amalgame diminue la résistance de l'obturation, quels sont les facteurs qui favorisent cette rétention du mercure? Ces facteurs sont: 1) la quantité de mercure en proportion de l'alliage; 2) la trituration du mélange; 3) la force et le temps consacrés au foulement de l'amalgame dans la cavité. La quantité du mercure utilisé dans le mélange est certes un facteur qui peut et qui doit être contrôlé. Des expériences[19,20] ont démontré que, nonobstant la pression exercée au cours de l'insertion de l'amalgame, plus un alliage contient de mercure, plus cet alliage est susceptible d'en retenir au sein de l'obturation.

Il faut donc se servir de quelque appareil qui permette de graduer raisonnablement les doses.

Un trituration incomplète donne un amalgame qui durcit rapidement et d'où il est quasi-impossible d'extraire le surplus de mercure. De plus, ses parcelles d'alliage ne sont pas complètement mêlées au mercure et il en résulte une charpente d'amalgame plus faible. En fin de compte la résistance et la force de cohésion sont considérablement amoindries.[21,22]

Peu importe la marque d'amalgame, il faut le bien triturer; autrement, sa résistance s'affaiblit et sa surface risque

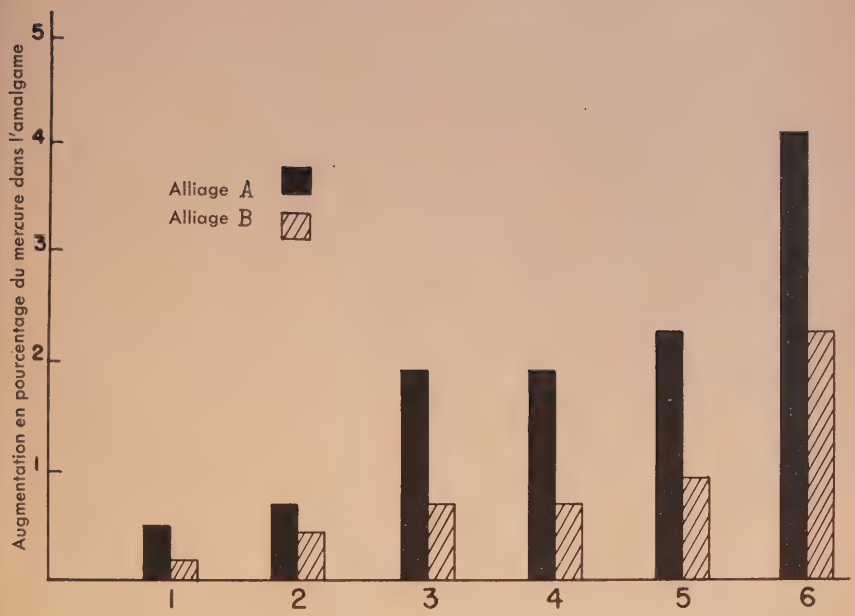

FIG. 3 — Temps écoulé entre la trituration et la condensation — en minutes

d'être plus rugueuse et exposée à se corroder et à perdre son poli. De nombreuses statistiques[23,24] démontrent qu'une trituration incomplète donne une piètre restauration. En augmentant la pression pour condenser l'amalgame dans la cavité, on élimine le surplus de mercure et on augmente la résistance de l'obturation aux fendillures possibles.[19,25,26] Qu'on se serve d'une condensation à la main ou d'un fouloir mécanique, il faut que la pression soit suffisante pour enlever le mercure que l'amalgame a en trop pour qu'il soit malléable. Il ne faut pas laisser séjourner l'amalgame trop longtemps dans la cavité avant de l'y condenser. Harvey[27] et Mosteller[28] ont tous deux fixé à trois minutes l'extrême limite pour fouler l'amalgame; par ailleurs, Ward[29] a démontré que l'amalgame retenait plus de mercure quand il était foulé cinq minutes après son insertion dans la cavité et moins, quand il était condensé immédiatement après sa mise en place. Les nouvelles techniques[28,30,32] recommandant l'usage de constituants plus secs pour faire l'obturation et d'alliages qui durcissent plus rapidement compliquent sérieusement ce problème. Pour établir des règles au sujet de l'élimination relative du mercure avec ces matériaux nouveaux, l'auteur a entrepris les expériences suivantes.

Expériences

Pour placer les amalgames dans des conditions de préparation identique, on a choisi deux alliages mis à la disposition des dentistes par les maisons de commerce, l'un durcissant lentement, l'autre rapidement. On s'est servi d'un malaxeur automatique pour triturer l'amalgame et d'un fouloir mécanique qui exercait une pression de 2,000 livres par pouce carré. Après avoir mêlé l'amalgame, les échantillons étaient préparés à des intervalles d'une minute jusqu'à un

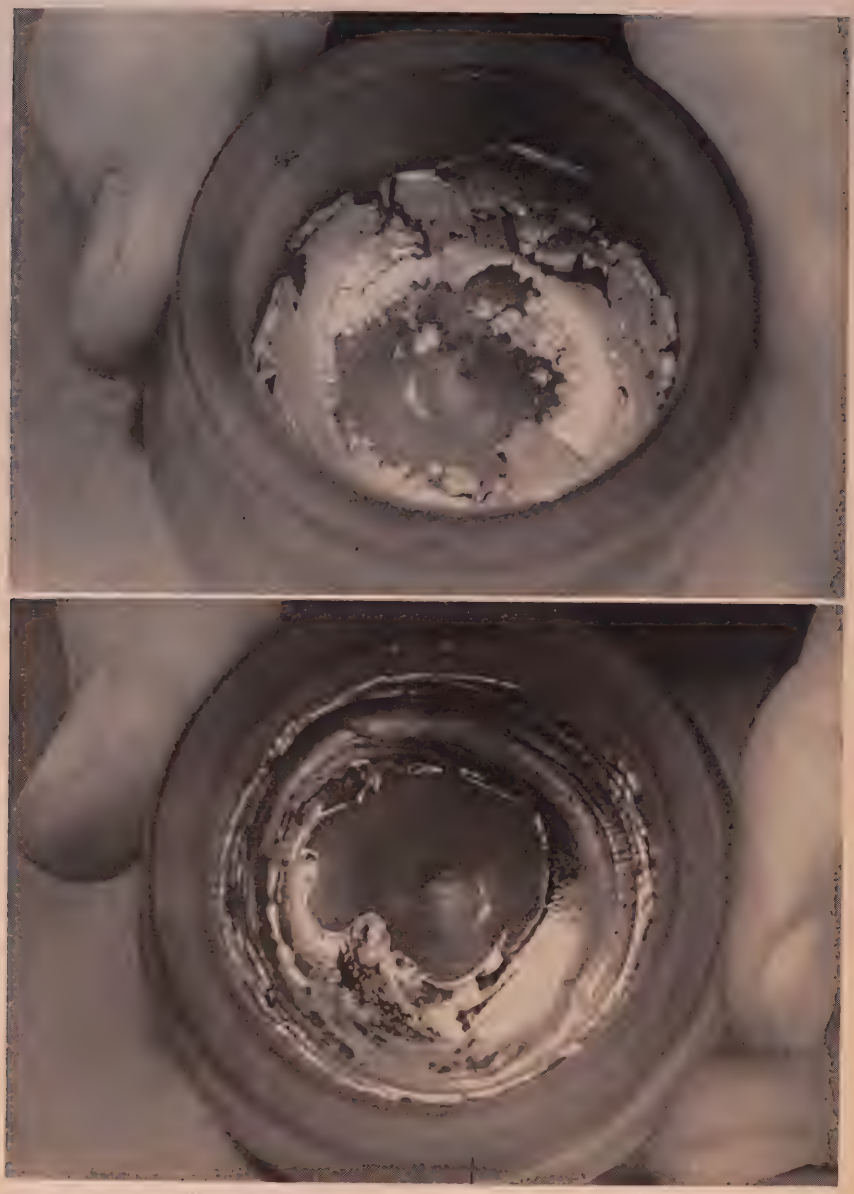

FIG 4 — (haut) — Mélange insuffisamment trituré. Par sa consistance, ce mélange donne une faible résistance, un plus gros volume et une surface rugueuse. (bas) Une trituration à fond donne des propriétés parfaites et une restauration clinique supérieure.

maximum de six minutes. On n'extrayait pas de mercure de l'amalgame avant de le condenser. On a préparé six échantillons et on a foulé chacun d'eux de minute en minute. Le tableau no 2 nous montre la moyenne de la perte de résistance en comparaison de la période de temps écoulé entre la condensation de chacun des échantillons. On se rend facilement compte qu'un amalgame perd proportionnellement de sa force à mesure qu'on attend plus ou moins longtemps avant de le fouler. La perte de résistance est plus considérable et plus rapide avec l'alliage (A) qui durcit plus rapidement. Quand on a analysé les échantillons pour en connaître la teneur en mercure (fig. 3), on a constaté que la quantité de mercure était plus forte dans les amalgames qui n'avaient pas été foulés immédiatement après leur malaxage et aussi dans ceux qui durcissent rapidement. Ces constatations confirment ce que d'autres chercheurs avaient trouvé: qu'on ne devrait pas se servir d'amalgame qui a commencé à durcir. Il faut tenir compte de la perte de résistance provenant du surplus de mercure resté dans l'amalgame. De grosses obturations exigent qu'on prépare de l'amalgame à plusieurs reprises. On a encore beaucoup à apprendre sur l'influence des proportions de mercure et d'alliage sur les autres propriétés de l'amalgame, de même, on n'est pas encore fixé sur les rapports de ce facteur avec les problèmes posés par la condensation. Ware et Docking[33] ont fait du beau travail dans ce domaine. On s'entend[34] pour croire qu'une trop grande quantité de mercure favorise le ternissage de l'obturation, mais il faudra encore des recherches expérimentales et cliniques pour situer exactement ces relations. Mais, en général, on peut dire que le rôle du mercure est immense dans le comportement de l'obturation en amalgame.

Trituration

Dans le chapitre précédent, on a souligné l'importance d'une trituration à fond. Comme le démontre l'illustration no 4, à gauche, il faut éviter une demi-trituration. Un amalgame mêlé de la sorte n'a pas de résistance, il se fracture facilement; il se désagrège dans ses bords et se ternit facilement. Si le malaxage est porté jusqu'à la consistance montrée dans l'illustration no 4, en haut, on obtient de l'amalgame son maximum de résistance; il se manipule facilement, il ne durcit pas trop vite pour être bien condensé et sa surface sculptée ne se détériorera pas facilement.[23,24,31] Le temps requis pour l'amener à cette consistance se base sur plusieurs facteurs, comme la grosseur des limailles d'alliage, le genre de mortier et la rapidité de la trituration. Il faut donc standardiser le malaxage selon les disponibilités de chaque cabinet. Quand l'amalgame est complètement malaxé, l'aspect de sa consistance aide certes à juger de sa valeur. Rien ne prouve qu'un malaxage à la main exécuté avec soin n'est pas aussi bon qu'un malaxage mécanique; cependant, le malaxage mécanique rend plus facile la standardisation des techniques pour la moyenne des opérateurs.[35] Là réside l'avantage de l'appareil. L'efficacité et le degré de trituration varie beaucoup d'un malaxeur à l'autre.

Il est vrai que le degré de trituration joue un rôle considérable dans les changements volumétriques qui se produisent au sein de l'amalgame au cours de sa cristallisation; par exemple, la dilatation est proportionnée au temps du malaxage; plus celui-ci est long, plus la dilatation s'accentue. Cependant, on ne sait pas si la petite dilatation ou la contraction à quelques microns près constatée au laboratoire ont une signification importante dans le domaine pratique. Des observations cliniques faites au sujet d'amalgames triturés à fond et d'autres constitués d'alliage spécialement préparé pour donner une contraction considérable n'ont pas montré un seul cas de fissure marginale ou de carie récidivante. Les restaurations faites d'amalgame trituré à fond se sont montrées meilleures au point de vue surface et au point de vue adaptation aux bords de la cavité. Ces constations semblent prouver l'opinion

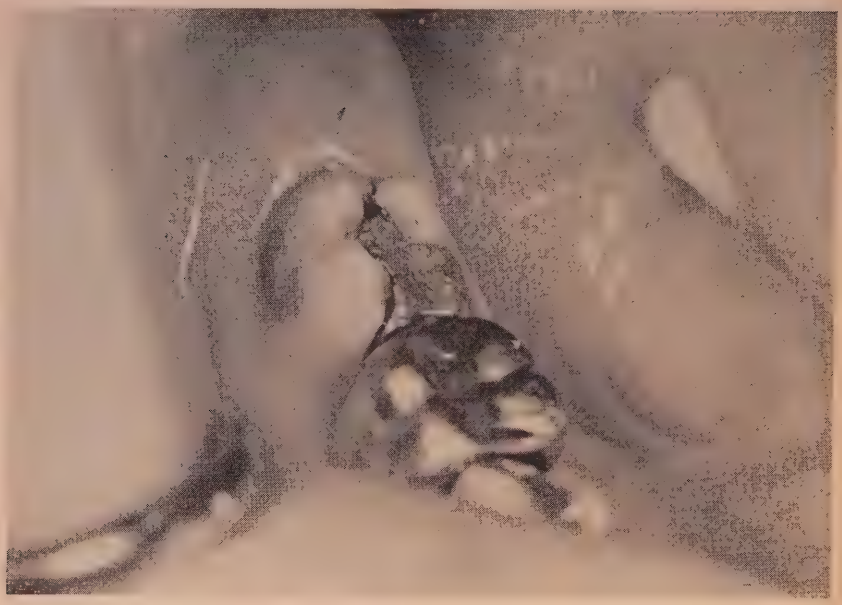

FIG. 5 — Restauration montrant une faille marginale.

de Roper[12] et d'autres[30,31,37] qui prétendent qu'il vaut mieux triturer trop un amalgame que de ne pas le triturer assez. L'amalgame qu'on appelle "à fossé," tel que le montre l'illustration no 5 s'obtient, dit-on, par la contraction du matériel; mais il faut plutôt mettre en cause la préparation de la cavité (largeur ou extension insuffisantes), le foulage fautif de l'amalgame (joints trop riches en mercure), ou la sculpture incorrecte de l'obturation (amalgame trop mince à certains endroits).

Il est possible qu'il y ait un faible pourcentage d'obturations exécutées tous les jours qui montrent en fait une dilatation évidente. Les appareils utilisés pour le malaxage et le foulage de l'amalgame sont de nature à minimiser la dilatation qui se produit au cours de la cristallisation de la substance obturatrice; ces appareils s'emploient de plus en plus fréquemment. Ware[38] a observé que 25 pour cent seulement des dentistes australiens ont obtenu une dilatation de leur amalgame, en se servant des procédés généralement en usage dans les cabinets. Cependant, ces constatations ne veulent pas dire qu'il faille se servir d'alliage qui se contracte ou de techniques quelconques; elles ne font que démontrer que les petits changements volumétriques constatés en recherches peuvent bien ne pas avoir d'importance en clinique et qu'il faut réaliser qu'une amalgamation incomplète constitue le facteur le plus dangereux dans le malaxage de l'amalgame.

Résultats de l'humidité

La contamination de l'amalgame par l'humidité cause une dilatation considérable et c'est là un problème d'envergure pour le clinicien. Environ seize pour cent des échecs obtenus avec l'amalgame sont des suites de ce phénomène. Le zinc contenu dans l'alliage dissasocie l'eau et en libère l'hydrogène. La dilatation produite

par cette décomposition de l'eau peut atteindre 500 microns par centimètre; elle occasionne des surplus aux périphéries et favorise des récidives de carie. En même temps, les vides qui se forment au sein de l'obturation diminue sa résistance dans une proportion de 25%.[40] Il faut donc à tout prix maintenir sec le champ opératoire et éviter de manipuler l'amalgame avec les mains. Cette humidité doit s'infiltrer dans l'obturation au cours du malaxage ou au cours de la condensation dans la cavité; car la salive ne peut contaminer l'amalgame une fois qu'il est bien foulé dans la cavité. Depuis deux ans, on a mis sur le marché des alliages qui ne contiennent pas de zinc; mais, à date, ces produits ne sont qu'au stade expérimental. On ne possède pas encore de statistiques qui prouvent qu'ils sont de qualité supérieure aux autres. Comme le zinc est utilisé pour neutraliser les oxydes, la préparation des alliages, qui ne contiennent pas de zinc, exige de grandes précautions et doit probablement faire l'objet d'un soin tout particulier de la part du manufacturier. Si la confection de ces alliages est bien faite, il n'y a pas de raison pour qu'ils ne soient pas aussi bons que ceux qui en contiennent.

On a entrepris des expériences avec trois alliages bien connus fabriqués par la même maison; les uns contenaient du zinc, les autres n'en contenaient pas. On a mesuré leur résistance à la compression, une heure et vingt-quatre heures après leur cristallisation; on a fait de même pour leur volume. La condensation de ces amalgames fut effectuée en observant scrupuleusement les conseils du manufacturier, en utilisant un fouloir automatique exerçant une pression de 2000 livres par pouce carré. On peut voir dans le tableau qui suit les moyennes de la résistance d'au moins cinq spécimens.

La force de résistance des alliages, ordinaire et ne contenant pas de zinc, des fabricants A et C est à peu près la même. Le volume de l'alliage sans zinc du fabricant C est quelque peu plus grand. On peut dire la même chose de l'alliage B et la force de résistance de l'amalgame sans

Tableau. Résistance à la compression et volume d'alliages contenant du zinc et d'autres ne contenant pas de zinc, fabriqués par le même manufacturier.

Matériel	résistance—lbs au pouce carré 1 heure	24 heures	volume—%
Alliage A			
ordinaire	17,000	39,000	1.5
sans zinc	16,000	39,000	2.2
Alliage B			
ordinaire	17,500	43,000	2.0
sans zinc	10,000	43,000	3.1
Alliage C			
ordinaire	9,000	41,000	2.8
sans zinc	9,000	37,000	3.8

zinc est moindre une heure après son malaxage. On peut probablement trouver la cause de cet écart dans le fait qu'un des deux amalgames durcit moins rapidement. Il faut se rappeler que les spécifications de l'A.D.A. au sujet du volume des alliages fixent à 4 pour cent sa limite extrême: tous les alliages qui ont servi à l'expérience respectaient ces conditions. En conclusion, les expériences ont démontré qu'il n'y a pas de différence notable au point de vue résistance entre les alliages qui contiennent du zinc et ceux qui n'en renferment pas, du moins pour les trois marques qui ont été utilisées. Les alliages sans zinc sont moins propres à manipuler que les autres, mais cette constatation n'a pas de rapport avec leur rendement clinique ou leur comportement comme matériel d'obturation. A cause de ce fait, des auteurs ont prétendu que ces alliages pourrait se ternir plus rapidement. Les expériences rapportées ici n'ont pas porté sur cet aspect de la question et toute conclusion à cet effet serait prématurée. On peut dire que chaque fois qu'une contamination de la salive est à craindre, il vaudrait mieux utiliser un amalgame qui ne contient pas de zinc. Cependant, il ne faudrait pas que le dentiste qui utilise ces alliages se sente à l'abri de tout accident.[39] Peu importe le genre d'amalgame qu'on utilise, il faut toujours le garder sec.

Condensation

On ne comparera pas dans cet article les mérites de la condensation à la main

et ceux de la condensation mécanique. Il y a plusieurs techniques utilisées pour constituer l'obturation en utilisant à bon escient les portions du matériel. Des expériences menées récemment[41] ont démontré que les propriétés physiques définitives d'amalgames insérés en éliminant progressivement le mercure ne diffèrent pas beaucoup de celles d'amalgames constitués complètement de portions plus sèches. On doit se rappeler que le dentiste ne doit jamais se servir d'amalgame qui soit trop mou ou trop fluide. Il faut enlever de l'amalgame une certaine quantité de mercure pour que le fouloir puisse exercer sa pression sur une masse solide. Par contre, il est bon de laisser dans la substance obturatrice suffisamment de mercure pour qu'au cours de la condensation de l'amalgame le mercure puisse être amené en surface. Sweeney[42] et Miller[43] ont tous deux mis les praticiens en garde contre les effets possibles d'une telle consistance: elle peut donner une obturation en paillettes et à surface rugueuse. Un chercheur suédois[44] vient de démontrer comment l'insertion de petites quantités d'amalgame donne une meilleure adaptation que la mise en place de portions plus considérables.

Il ne sera pas question ici des matrices. Cependant, des travaux[45] ont été faits récemment sur les mérites des différents appareils pour tenir les matrices et des méthodes utilisées pour redonner aux dents à l'aide des matériaux dentaire leur forme de contour. Ces recherches ont montré que nonobstant le genre de matrice employé, il faut que les bandes soient bien adaptées et bien coincées sur la dent pour éviter les surplus cervicaux d'amalgame et reproduire le mieux possible les contours proximaux. Dans ces travaux, on mentionnait aussi l'avantage de coïncer la bande sur la dent pour aider à l'élimination du mercure, plus spécialement aux parois proximales et cervicales. On a mentionné plus haut à plusieurs reprises qu'au cours de la condensation de l'amalgame dans la cavité l'opérateur doit faire en sorte d'en faire sortir le plus de mercure possible. Mais, avec tout le soin possible, l'un des inconvénients de l'amalgame comme obturation dentaire réside dans sa faible résistance. Ce défaut se manifeste surtout au cours des premières heures qui suivent l'insertion de l'obturation. Plusieurs alliages, au bout d'une heure, n'ont atteint que 10 ou 15 pour cent de leur résistance maximum.[46] Ainsi, même s'il a été parfaitement manipulé, un amalgame qui aura au bout de vingt-quatre heures une résistance maximum de 50,000 livres par pouce carré n'aura qu'une force de résistance de 8,000 livres par pouce carré une heure après sa mise en place dans la cavité. On ne connaît pas exactement la force de résistance qu'une obturation doit avoir pour subir la mastication sans se briser. Mais une résistance de 8,000 livres par pouce carré nous paraît bien insuffisante. Les nouvelles spécifications de l'A.D.A. exigent une résistance d'au moins 42,000 livres par pouce carré au bout de vingt-quatre heures et une résistance moindre au bout d'une heure.

Une obturation en amalgame peut se briser et se détériorer quelques heures après son insertion sous l'effet du choc masticateur, intentionnellement ou accidentellement, même si la cavité a été bien préparée et la substance obturatrice bien préparée et bien manipulée. Il faut avertir le patient de la possibilité de cet accident et ceux qui demandent à leurs patients de manger un repas liquide après une obturation n'ont pas tout à fait tort.

Adaptation marginale

Des découvertes effectuées à l'aide des isotopes radio-actifs[18,47,48] ont modifié nos concepts sur le degré d'adaption des matériaux d'obturation aux parois marginales des cavités. Ces appareils de laboratoire nous ont montré qu'aucune substance obturatrice s'adapte parfaitement aux parois des cavités; toutes ont des failles à ces endroits. De tous les matériaux, l'amalgame possède le meilleur contact avec les bords de la cavité et apparemment ces défauts se minimisent avec le temps. On croit que lentement les ions métalliques et que des pro-

duits de corrosion s'entassent dans ces lacunes et qu'ils bloquent ainsi l'infiltration des liquides. On pense aussi que ces ions ont de plus une influence bactériostatique. Les recherches à venir devraient porter sur les facteurs qui jouent sur cette adaptation marginale, par exemple, les techniques de condensation, la trituration, la grosseur des cristaux et les changements thermiques. Au sujet de ces modifications calorimétriques, Nelsen et ses collaborateurs[49] ont fait des recherches intéressantes, qui illustrent ce phénomène; l'influence de la température soulève un aspect intéressant de la question; ces auteurs ont trouvé que la température joue un rôle dans l'adaptation marginale de l'obturation par la différence qui existe entre le coefficient d'expansion de la restauration et celui des tissus de la dent. Cet écart permet à la salive de s'infiltrer dans les bords quand l'obturation subit l'effet de modifications thermiques considérables. Quoiqu'on ne connaisse pas la portée de ces observations dans le domaine clinique, il est intéressant de noter que, dans cet aspect du problème, l'amalgame est supérieur à tous les autres matériaux d'obturation.

Conclusions

L'amalgame demeure encore le matériel le plus populaire pour les obturations. Cette constatation et les qualités nombreuses que possède l'amalgame justifient les recherches qui se perpétuent à son sujet. Les travaux de base qui se font sur son adaptation, sur les phénomènes qui se produisent durant sa cristallisation, sur sa conductibilité de l'électricité sont de nature à apporter des améliorations notables au stage clinique. Pour le moment, on peut noter les observations suivantes:

1) Un alliage à cristaux fins favorise une meilleure adaptation de l'amalgame, donne une surface plus lisse et permet d'obtenir une obturation plus résistante.

2) On possède maintenant des données précises sur les rapports qui existent entre la quantité de mercure qui séjourne dans l'amalgame et la résistance de l'obturation à la compression. Quand il y a beaucoup de mercure, comme on le constate souvent en clientèle, l'obturation perd de sa force, tout spécialement aux régions marginales. On peut éviter de laisser trop de mercure en suivant les conseils du manufacturier de l'alliage, en le mêlant à fond, en le foulant avec la pression voulue et en n'utilisant pas d'amalgame qui a un peu durci.

3) Des observations faites dans les laboratoires de recherches et en clinique montrent qu'il faut triturer à fond l'amalgame; cette précaution est essentielle au succès de l'obturation.

4) La cause la plus fréquente d'échec se situe dans la contamination de l'amalgame par l'humidité. La présence de salive dans l'amalgame et une mauvaise technique pour la préparer et l'insérer favorise une dilatation considérable et une diminution notable de sa résistance. Les alliages, qui ne contiennent pas de zinc se comparent à ceux qui en possèdent. On ne sait pas encore s'ils se ternissent plus ou moins facilement que les autres. La question reste à l'étude.

5) La résistance d'une obturation en amalgame aux chocs de la mastication est faible au cours des premières heures qui suivent son insertion. Il faut prévenir le patient de ne pas mordre trop fort sur ses dents durant cette période de temps.

6) Des recherches réalisées avec des isotopes radioactifs montrent qu'aucune substance obturatrice ne donne une adaptation parfaite aux parois des cavités; cependant ces recherches prouvent que l'amalgame ne le cède en rien $^{71\ 50\ AL}$ aux autres matériaux sous ce rapport.

Les obturations en amalgame constituent encore un domaine intéressant et productif pour les recherches. Comme toutes les autres substances obturatrices, l'amalgame réagit énormément à tous les facteurs qui entourent sa manipulation. Son succès en pratique se base sur une surveillance de tous les détails de sa préparation.

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Céphalées et articulation temporo-maxillaire.

Malgré les travaux déjà anciens de Costen, il ne semble pas que le rôle des troubles de l'articulation temporo-maxillaire (arthroses en particulier), à l'origine des céphalées, ait été suffisamment reconnu jusqu'à maintenant. S'étant attachés à la question, R. Berlin, L. Dessner et S. Aberg (Acta Scand., 3 mai 1956) rapportent 165 cas de céphalée chronique (92 femmes et 73 hommes) en relation avec un dysfonctionnement de l'articulation temporo-maxillaire. Toutes ces céphalées duraient depuis fort longtemps, leur durée variant de cinq à vingt ans, dans 42 observations. Après un traitement correcteur des troubles temporo-maxillaires, 83% des sujets furent guéris ou considérablement améliorés.

Nouvelles de l'Association

Le ville de Winnipeg adopte la fluoruration

Le 28 décembre 1956, la ville de Winnipeg a commencé à fluorurer l'eau de son aqueduc. Jusqu'à maintenant, Winnipeg est donc la ville la plus populeuse (pop. 409,687) du Canada à pratiquer la fluoruration de son eau. Le nombre des citoyens du Canada qui boivent de l'eau fluorurée se chiffre maintenant à environ 900,000, soit 6% du total de la population.

Réunion de l'A.A.S.P. — Fluoruration

A la réunion annuelle de l'Association américaine de Santé publique, tenue du 12 au 16 novembre 1956, à Atlantic City, on a consacré une séance au problème de la fluoruration. Quatre rapporteurs ont présenté des communications sur des expériences entreprises par l'Institut national des Recherches dentaires (Washington). Leurs statistiques ont montré que l'eau fluorurée a un effet bienfaisant sur la diminution de la carie dans les dents qui sont poussées, que l'excrétion des fluorures chez les enfants est extrêmement favorable et qu'on n'a pas constaté d'influence préjudiciable de l'ingestion de fluorures sur les tissus paradentaires.

Corporations exercant la médecine

Le 15 août 1956, un juge de la Cour Suprême de l'Ontario, l'Honorable Juge McLennan, a rendu un jugement intéressant sur l'incorporation de l'exercice de la médecine. Son jugement traite longuement de cette question et le savant juge croit que cette façon de faire s'oppose à l'esprit et aux buts que se propose la loi médicale. La cause en litige demandait si un contrat passé entre deux parties pour régler un différent pouvait être mis en force par injonction par le défendeur. Le défendeur était un chirurgien qui avait passé un contrat écrit avec une compagnie (Carruther's Clinic Limited de Sarnia, Ontario) qui en l'occurrence occupait en poursuite; d'après ce contrat, le défendeur s'engageait à ne pas exercer sa profession dans un rayon de 20 milles de l'emplacement de la clinique pour deux ans après l'expiration du contrat passé entre les deux parties. Le défendeur a travaillé deux ans à la clinique pour ensuite exercer dans une région prescrite par l'entente. La Carruther's Clinic Limited a actionné ce chirurgien pour n'avoir pas respecté son contrat. Tous les revenus de la clinique lui provenaient d'honoraires perçus par des médecins qui faisaient partie de son organisation et par d'autres qui ne lui appartenaient pas; la clinique n'avait pas d'autre source de revenus. La compagnie percevait ces argents après entente avec les médecins, entente qui était la même que celle passée avec le défendeur.

Le jugement analyse longuement la nature précise du contrat et déclare finalement que la convention qui faisait partie de l'arrangement entre la corporation et le praticien ne peut être maintenue. En répondant à certaines allégations faites en faveur du demandeur, le juge a exprimé des opinions qui méritent d'être rapportées:

"Les preuves soumises montrant ce que la compagnie demanderesse faisait déjà et les déclarations faites par les dirigeants de l'entreprise, en dehors de la Cour, portent à conclure que, dans les lettres patentes de la compagnie et dans ses rapports avec les médecins concernés, le bilan de ses affaires n'est qu'un trompe-l'oeil et un simulacre. La compagnie jouait le rôle de maître et les médecins celui de serviteurs. Dans un cas semblable, la loi donne à une corporation une entité artificielle; mais, de par nature, une telle corporation ne peut manier un bistouri ou traiter une maladie, pas plus qu'elle ne peut réparer un parechoc ou graisser le moteur d'un véhicule-moteur, elle peut et elle agit en fait par le truchement de ses employés, ses agents et ses officiers et par des lois incorporées telles que des résolutions et des règlements. Elle possède la capacité ordinaire d'un individu naturel (Bozana Creek Gold Mining Co. vs The King (1916) 1 C.A. 566). Les médecins étaient les serviteurs de la compagnie demanderesse; ils exercaient la médecine; ils étaient sujets à un contrôle détaillé et rigide de la part de la compagnie; le bureau de direction et le comité exécutif décidaient de ce qui devait être fait pour les patients dans diverses circonstances; la compagnie avait le droit de fixer les honoraires et le comité exécutif donna au personnel du bureau le pouvoir de changer les honoraires que les médecins avaient établis pour leurs traitements; la compagnie préparait les comptes des patients; elle percevait tous les honoraires gagnés par les médecins et ces sommes constituaient son seul revenu; sa marchandise ou son commerce consistait uniquement dans les services professionnels prodigués par ses serviteurs, les médecins. J'en suis venu à la conclusion que la compagnie demanderesse pratiquait la médecine.

"Si le demandeur n'a pas le droit d'exercer la médecine, alors la convention établie pour atteindre ce but est nul et illégal. Pour trancher cette question, il faut faire appel aux articles de la loi médicale." Le savant juge après avoir revu certaines clauses de la loi médicale, déclare en partie ce qui suit:

"Je ne suit pas de l'avis de l'avocat du demandeur qui déclare que les cas que j'ai cités font autorité en ce sens que les corporations ne tombent pas à toutes fins pratiques sous le coup de la loi médicale. Même en excluant l'article 49 de cette loi, son but ou sa politique exprime clairement que seuls ceux qui sont qualifiés et dûment enregistrés peuvent s'engager dans la pratique de la médecine, parce que la santé et le bien-être du public exige que ceux qui sont malades ou blessés ne soient traités seulement que par ceux qui, par leur entraînement, leur éducation et leur esprit, savent à fond ce qu'ils font et qui sont sous la dépendance et la surveillance d'un organisme, dont l'un d'eux est le Ministre de la Santé de la province.

"J'emploi le mot 'seulement' à causes des termes employés dans la clause 19 (2)

"Seuls les individus dont les noms paraissent dans le registre mentionné dans la sous-section 1 sont jugés qualifiés et licenciés pour exercer la médecine, la chirurgie ou les accouchements, en Ontario, à moins qu'il en soit prévu autrement. Dans ce cas-ci, je crois que les principes établis dans ces trois textes principaux peuvent être appliqués."

Après avoir cité ces textes, l'honorable juge McLennan continue son exposé dont voici des extraits:

"La tendance malicieuse ou l'effet de l'entente arrêtée ou de son esprit constitue un élément qu'il faut considérer pour savoir si le contrat ou son esprit est contraire au but ou à l'intention du statut. Dans les causes que j'ai citées, la tendance malicieuse est soit discutée à fond soit inhérente aux raisons qui motivent le jugement. Je me propose donc de dire un mot au sujet de l'intention que peut avoir une corporation à exercer la médecine. Les actionnaires sont ceux qui en dernier ressort contrôlent la compagnie. Quoiqu'en première instance, les actionnaires puissent être des médecins, avec le temps, des profanes deviendront détenteurs des parts, soit par échange ou par succession, et c'est ce qui s'est produit à la Carruther's Foundation, où toutes les parts ont changé de main. Les profanes n'ont pas l'idéal de la profession médicale pour songer d'abord à servir les malades et les blessés; ils sont seulement intéressés aux profits et peuvent imprimer à la compagnie leurs objectifs, en substituant à l'esprit de service une ambiance commerciale. On s'est rendu compte de cette attitude de la compagnie même avant que la fondation acquiert les parts, quand les employés de bureau ont été avisés d'augmenter les honoraires fixés par les médecins en bas du tarif normal. On pourrait citer plusieurs exemples qui se sont produits aux Etats-Unis où l'intrusion de compagnies commerciales dans l'exercice professionnel a fait baisser le niveau d'étiquette professionnelle de ces professions (re: Cooperative Law Co. 198, N.Y., 179 Barton vs Cadington County, 140, A.L.R. 550).

"De toute évidence, la raison d'incorporation dans cette cause n'était pas seulement de continuer la clinique, mais de soulager du fardeau des impôts les intéressés qui contrôlaient la compagnie. La combine imaginée pour rendre à César aussi peu que possible a porté la compagnie à faire des choses dont autrement auraient été personnellement responsables les actionnaires.

"Dans l'exercice médical, l'intérêt du patient passe en premier lieu. Le code d'étiquette professionnelle de l'Association médicale canadienne explique en ces termes cette idée:

"Toutes les professions ont comme seul but ultime de servir l'humanité le mieux possible; les médecins, plus que tous autres, ont ce devoir puisque leurs services s'occupent directement et d'une façon immédiate de la santé du corps et de l'esprit de leurs semblables."

Selon l'ordre voulu par la nature, les relations entre patients et médecins reposent sur le contrôle du médecin sur son patient. Cette question de contrôle est reconnue par la loi, comme de cause à effet, tel que décrite par Lord Penzance dans la cause Parfitt vs Lawless, 1872, L.R. 2 P. & D., 462 à 468: "En toute équité, les personnes qui ont des rapports entre elles, telles qu'un parent et un enfant, un homme et sa femme, un médecin et son patient, un avocat et son client, un confesseur et son pénitent, un tuteur et son pupille, sont sujettes à certaines présomptions quand il y a des échanges entre elles; et si un contrat ou un don fait en faveur de celui qui détient la situation la plus influente est contesté par celui qui est sujet à cette influence, les cours de justice placent sur les épaules du premier le soin de prouver que la transaction a été menée avec équité, comme s'il s'agissait d'étrangers; que la partie la plus faible n'a pas été naturellement influencée par le plus fort ou que l'être inexpérimenté n'a pas été subjugué par une intelligence plus aguerrie.

"Quand une personne ou une entité légale non qualifiée, dont le seul but est de faire de l'argent, intervient dans les relations de patient à médecin et qu'elle commande celui-ci, soit directement ou indirectement, le bien-être du patient est sujet à des intérets divergents, qui ne le favorisent pas nécessairement et même parfois s'y opposent. Four toutes ces raisons, mon avis est que l'exercice de la médecine par le demandeur vient en conflit avec l'esprit et le but de la loi médicale. Il s'en suit qu'un contrat

qui provient ou qui est relié à une transaction illégale est lui-même illégal!"

Ce jugement est rapporté avec assez de détails parce que la question de l'incorporation de pratique a fait l'objet de beaucoup de discussions au cours des dernières années.

Réunion annuelle

Bureau des Gouverneurs, du 19 au 22 juin —Congrès, du 23 au 26 juin.

Les séances du Bureau des Gouverneurs débuteront à 2.30 hrs p.m., mercredi, le 19 juin à l'Hôtel Royal Alexandra.

La section anglaise de la livraison de mars du Journal contenait des renseignements détaillés au sujet du Congrès. Les membres sont priés de remplir les formules d'inscription située à la page 160 du Journal et de les envoyer au docteur W. F. MacKenzie, 700 Boyd Bldg., Winnipeg 1, Manitoba.

Comme il y a d'autres congrès qui se tiennent dans l'ouest du pays à peu près à la date de notre congrès et à cause de l'affluence des touristes à cette époque, les dentistes de l'est feraient bien de réserver dès maintenant leurs billets de transport On pourra recueillir les billets plus tard. On peut obtenir des certificats d'identification pour bénéficier de tarifs de faveur sur les chemins de fer en s'adressant au secrétariat de l'A.D.C.

La Cie Trans Canada offre des tarifs réduits pour des groupes d'au moins dix personnes qui voyagent ensemble. Ces voyageurs doivent tous faire le voyage d'aller en groupe, mais peuvent revenir à leur gré et ils doivent tous avoir des billets de la même classe.

Si on en juge par le nombre des inscriptions à date, l'assistance sera nombreuse. Vous pourrez aider le comité d'organisation en lui faisant parvenir à l'avance vos formules d'inscription.

Prince-Rupert adopte la fluoruration

On apprend que Prince-Rupert, C.B. a commencé à fluorer l'eau de son aqueduc le 15 mars 1957; la population de cette ville est de 9,000 âmes.

Le budget fédéral de 1957

Comme on l'a mentionné auparavant, le gouvernement a accordé aux individus qui travaillent à leur compte la permission de déduire de leur revenu les sommes qu'ils consacrent à un fonds de retraite. Les compagnies qui s'occupent de systèmes de rentes s'affairent actuellement à élaborer des plans qu'elles offriront au public. On conseille aux dentistes d'être prudents en signant des contrats jusqu'à ce que les termes de la loi soient connus. Très bientôt, le Plan d'Assurance - Pension de l'A.D.C. fournira aux membres des renseignements sur un projet qui leur sera loisible d'accepter. Depuis quelques années, l'Association a soumis au gouvernement fédéral des mémoires pour obtenir des dégrèvements de tarifs de douane sur les pièces d'équipement dentaire. Comme résultat, depuis 1955, les fauteuils, les unités, les moteurs électriques dentaires et leurs parties de remplacement peuvent entrer au pays francs de port. On a tenté aussi d'inclure dans cette liste les lavabos dentaires et dans le nouveau budget de 1957, ces articles ont été déclarés indemnes de frais de douane.

Le docteur Ellis élu président de l'A.A.D.A.

Le docteur Roy G. Ellis, doyen de la faculté de chirurgie dentaire de l'Université de Toronto, a été élu président de l'American Association of Dental Schools, le 27 mars dernier. Cette nomination a été faite au cours de la réunion annuelle de l'A.A.-D.C., qui eut lieu à Atlantic City du 25 au 28 mars. Le docteur Ellis est aussi président du Conseil d'Enseignement dentaire de l'A.D.C.

Nouvelle faculté dentaire pour le Manitoba

Le discours du trône de la Législature du Manitoba annonçait que la province établirait une faculté dentaire. Le fait est maintenant confirmé par un vote accordant les fonds nécessaires à cette fondation. L'argent qui a été voté correspond aux estimés qui avaient été fournis par la Commission Paynter qui avaient été chargée, l'été dernier, de mener une enquête sur la nécessité d'établir une faculté dentaire.

La faculté fera partie de l'université du Manitoba et pourra former 30 dentistes par année; de plus, dans son organisation, on prévoit un cours d'études pour 15 hygiénistes. On croit comprendre que cette faculté sera établie le plus tôt possible.

Déclarations sur la fluoruration

On trouve dans des communications publiées dans la livraison de 1957 des Rapports d'Hygiène Publique, publiés par le Ministère de la Santé, de l'Education et du Bien-Etre des Etats-Unis les remarques suivantes au sujet de la fluoruration:

La fluoruration à Grand Rapids aide les enfants plus agés

"Selon les résultats des examens dentaires annuels à Grand Rapids, Michigan, la fluoruration a été bénéficiable non seulement aux enfants qui sont nés depuis que la fluoruration est en force, mais aussi aux autres nés avant le début de la fluoruration; c'est ce qu'écrit le docteur Francis A. Arnold, Jr., directeur de l'Institut national des Recherches dentaires, Département de la Santé publique.

"Par exemple, les enfants de seize ans ont un

taux de CAO qui a baissé de 26 pour cent entre 1944 (année du début de la fluoruration) et 1954. Pour les enfants qui boivent de l'eau fluorurée depuis leur naissance, le pourcentage a baissé de 50 à 75%."

Les fluorures préviennent la carie dans les dents poussées

L'examen des enfants à Grand Rapids et Muskegon, Michigan, montre que l'eau fluorurée artificiellement contrôle la carie dans les dents qui sont déjà poussées. Des constatations faites auparavant avaient prouvé que le fluor avait un effet de prévention sur les dents qui n'étaient pas encore sorties des maxillaires. Quoique la protection accordée aux dents déjà en place sur le maxillaire d'un simple individu est relativement petite, l'effet total chez un grand nombre de personnes peut avoir une portée considérable dans le domaine de l'hygiène publique, selon les docteurs Richard L. Hayes, Norman Littleton et Carle L. White, de l'Institut National des Recherches dentaires, Département de la Santé publique."

Le périodonte n'est pas affecté par l'eau qui contient du fluor

"L'emploi de l'eau qui contient du fluor n'effecte pas la fréquence ou la gravité des maladies du périodonte chez les enfants ou les adultes; c'est ce que révèlent les examens de plus de 20,000 personnes, selon le docteur Albert L. Russell, de l'Institut National des Recherches dentaires, Département de la Santé publique. En comparant les données de trois groupes de personnes qui boivent de l'eau contenant des fluorures et d'autres qui consomment de l'eau qui ne renferme pas de fluor (ou à peu près pas), on en vient à la conclusion que les individus qui ingèrent de l'eau fluorurée ont des gencives plus saines, comme le montrent des exames cliniques, selon le docteur Russell. De plus, les extractions occasionnées par des maladies gingivales étaient quelque peu moins nombreuses chez les adultes qui vivent dans des régions où l'eau est fluorurée".

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Volume 23
Number 6
Toronto
June 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

An Outsider Looks at Dentistry*

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It is my intention to dwell briefly upon two aspects of dentistry;

(a) Dental Education,

(b) Dental Public Health.

It may seem strange to many of you that I should attempt to speak on such topics to those who are steeped in the profession of dentistry. My only claim to any knowledge of this field is that I had the very great privilege of serving on a Survey Committee of the Council on Dental Education which was charged with the responsibility of surveying the programmes of dental education offered by the Faculties of Dentistry in the five Universities of Canada which operate dental schools. I have been a member of the teaching profession most of my life, specializing in the field of science, an area which is the foundation of the study of dentistry. The other members of the Committee were Dr. Harvey W. Reid, Toronto, and Dr. Arthur L. Walsh, Montreal. These professionals are both internationally known in their chosen field as leaders in the practice of dentistry as well as in their professional organization. If I had not had the assurance of the support of such highly qualified members of the dental profession I could not have undertaken the task of the survey.

"A dentist is one whose profession it is to treat diseases of the teeth, and to make and insert artificial teeth." This is

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the definition given by Webster's dictionary and is a far cry from the period of the ancient Hindus who classed "tooth-drawers with hair-cutters, ear-borers, nail-trimmers and blood-letters". Hippocrates, he of the Hippocratic oath, wrote of dental diseases and their treatment four centuries B.C. and practised extraction of loose teeth and cauterization of aching teeth. In the early Christian era the presence of nerves in teeth was noted. Believing that nerves in the upper canines were branches of nerves in the corresponding eyes, Galen, who died 201 A.D., called these canines "eye" teeth. The early Roman dentists, after extracting temporary teeth in the path of irregularly placed successors, applied force daily with a finger to push the new teeth into their proper places, thus initiating procedures that have culminated in modern orthodontics. The ancient history of every important civilization mentions methods and prescriptions for the treatment of dental and oral disorders. Extraction of diseased teeth has been practised everywhere from time immemorial.

I must not allow myself to delve too deeply into the history of dental education. The main value of history is to enable us to avoid the mistakes of the past as we come down to the present and dip into the future. Formal dental education really began with the establishment of the first dental school which received its charter as the Baltimore College of Dental Surgery, an independent institution, in 1840. The first Faculty of the College consisted of four doctors of medicine, two of whom had received the honorary degree of D.D.S. from the American Society of Dental Surgeons. The charter specified that there should be at least one annual term of instruction of not less than four months' duration. The Faculty was empowered to confer the degree of Doctor of Dental Surgery upon the graduates, and also upon the practitioners after an examination, or simply as an honour. The school opened in November that year with five students, and the first class of two students graduated in March, 1841. Instruction in anatomy required close privacy in those days, and a secluded stable loft was used for the purpose. The school amalgamated with the University of Maryland in 1923.

In Canada the first formal approach to dental education was through the Royal College of Dental Surgeons of Ontario, incorporated in 1868, which established a School of Dentistry in 1875. In 1888 the School became affiliated with the University of Toronto and in 1889 the University graduated its first class. In 1925 this School of Dentistry became the Faculty of Dentistry. Dental Education in Canada is now conducted by five Faculties of Dentistry at Alberta, Dalhousie, McGill, Montreal, and Toronto Universities.

The Dental Profession of Canada through the Canadian Dental Association, founded in 1902, and the Council on Dental Education, established in 1945, have worked incessantly to lift dental education to a pinnacle of perfection. As one who looks at the profession from the outside, I can say without a shadow of doubt that the average citizen knows nothing of the efforts of your profession to lift itself up by its own bootstraps. Certainly I would have been unaware of your efforts had it not been my good fortune to participate over a period of six years in examining the programmes of dental education offered in the five

Canadian Schools. The pinnacle of perfection will, of course, never be reached; but even so the Faculties of Dentistry will continue to expand and extend their programmes of research as well as their efforts to keep abreast of the latest advances in the fields of dental practice and dental health.

I do not intend to tell you of the various steps taken by the Survey Committee to examine the dental schools. I would like to say a few words, however, about this operation and also about the preliminaries which brought about its inception. Shortly after the Council on Dental Education was established, the officers set about to prepare a report on the "Requirements for the Approval of a Dental School". The report was adopted in 1948 and was immediately distributed to the schools. The programmes offered by the schools had been standardized in 1925 as a five-year pattern, consisting of at least one year of approved work in an accredited academic college beyond senior matriculation followed by four clinical years. The Council's report had a salutory effect on the programmes thus offered. The Survey Committee arrived on the scene in 1950, and during the period of the survey made three official visits to each school on alternate years beginning with the 1950-51 session. After each visit a confidential report was made to the head of the University and to the Dean of the Faculty. The objective of the survey as set out in the 1948 report of the Council was to

"discuss and recommend alterations in dental education for the improvement and welfare of students of dentistry in order to produce graduates equipped with adequate knowledge to fulfil all the requirements of the practice of dentistry and to take their proper positions in society as a whole."

The final report of the Survey Committee was published in the 1956 Transactions of the Canadian Dental Association. During and since its period of operation the committee has witnessed and been encouraged by some progress which we hope it has been instrumental in accelerating. Some of the major developments have been the replacement of much obsolete equipment in laboratories and clinics which had largely outlived its period of usefulness. Needless to say this has entailed very substantial outlays of funds and is evidence of the utmost cooperation by the heads of the Universities concerned. The most urgent need in all the Colleges has been for facilities to increase the number of students to fill the great demand for dentists all across Canada.

To this end a new dental building is now being erected at Dalhousie University which will double the output of the school, while Toronto has plans to build a new school in the immediate future which will have facilities to graduate annually 125 dentists instead of 65 as at present. Furthermore Dalhousie hopes to graduate a class of 10 to 12 dental hygienists annually and Toronto from 35 to 50. This expansion was long overdue because for more than a quarter of a century, during a period of our greatest population increase, there had been no increase in training facilities across Canada, and a situation which had never at any time in our history been more than adequate had become one of extreme urgency in the provision of a satisfactory programme of dental public health.

This brings me to the second topic which I will deal with more briefly.

Our federal and provincial statutes have long made provision for public health, both dental and medical, and the Ontario Legislature votes millions annually to the Ontario Department of Public Health for public health services. Similarly large sums are spent each year by the Federal Government for health services. But no amount of funds alone will guarantee the satisfactory operation of a public health programme. To ensure the promotion of dental public health the members of the dental profession must give it their individual and collective active support.

The Toronto Dental School promotes

Dental Public Health in a most aggressive and realistic fashion under the capable direction of Dr. Glenn Mitton, D.D.-P.H., whose aims are:

(a) to provide information of the development of the health sciences and their impact on present day public health practices,

(b) to orient the student into considering dentistry as a health service and dentists as part of a health team who provide positive health services to the public,

(c) to provide a stimulus to the student's acceptance of his public health responsbility and to practise his profession with prevention as the ultimate goal,

(d) to teach the student to accept the responsibility for the dental health education of his patients, so that they may more effectively cooperate in their own dental health programme,

(e) to urge the student as a professional citizen to be a leader in his community.

The methods of pursuing these aims are through lectures, seminars, counselling, and field trips to local Health Units. These field trips prepare the student to correlate the health services in the community with that part of public health services expected of practising dentists; and to show the part played by the physician, the nurse and the dentist in the local public health programme. This brief summary of the Dental Public Health programme in the University of Toronto is evidence that dental education and dental public health are closely tied together in the final year of the Course in Dentistry so that the beginning practitioner will be encouraged to incorporate dental public health with his practice at the outset of his professional career.

During 1956 the Department of Public Health for the City of Toronto budgeted $225,000 for Dental Public Health. The staff included a Director, seven full-time, and twenty-nine part-time dental officers, and a full-time orthodontist in a total of 82 members. Other municipalities may participate in a relative manner, but, as is the case with public elementary and secondary education, equality of opportunity throughout the province is an ideal of the future towards which all must strive.

In 1953, the Medical Officer of Health of Toronto, in addressing this Dental Public Health Council with representatives of some 35 to 40 Dental Societies in Ontario, pointed up the extensive programme of Dental Public Health then carried on in Toronto, and I should like to refer you to the report of his address in the Journal of that day.

During the visits of the Survey Committee to the dental schools there was constant effort to emphasize the dire necessity of establishing the best possible programme of Preventive Dentistry. I should like to make one brief quotation from the report.

"The committee has continually pointed out the urgency to keep abreast of the knowledge of oral ills and methods of combatting them. To do this with a wholly inadequate supply of dentists is a disheartening task, but one of the first steps would seem to be to concentrate on the broad field of public health by organizing within the school a highly coordinated programme of prevention."

Your professional organization has formulated a Dental Public Health Policy which was approved by the Canadian Dental Association at its annual meeting in 1956, wherein it affirms the position that Public Oral Health Programmes "should function as an integrated part of the overall community health programme, and under the supervision and direction of a dentist, who, wherever possible, should be trained in public health."

The Association further states that its policy shall be:

"(1) to encourage further dental research,

"(2) to encourage and assist in prevention by:

(a) intense and continuous health education throughout the community with particular emphasis

on the importance of those preventive measures which can be performed only by the individual himself, or as a member of his family group;

(b) the use of preventive measures which can be provided through community organization, such as fluoridation;

(c) the use of those preventive services which can be rendered by the dental profession and its auxiliaries;

"(3) to encourage early diagnosis and systematic treatment;

"(4) to encourage the establishment of adequate facilities for the training of dentists and dental auxiliary personnel."

From the layman's point of view may I say that the Dental Profession has increased the respect and discerning thanks of the public at large by its attitude towards the preventive measure of fluoridation of water. About a year ago I withdrew my membership in the Ontario Property Owners' Association in protest against its resolution condemning fluoridation. Since the executive consists largely of real estate owners it would seem that their motive might be to keep down the tax rate rather than to improve the health of the people. The Canadian Dental Association is convinced through research that fluoridation greatly lowers the incidence of dental caries and is safe to use. A medical authority on Public Health says "Why not fluoridation of the public water supplies? Here we have a ready instrument, perfectly safe and scientifically proven, which will remove 60% or more of our dental 'headache', which, if applied at the younger age, will remove a comparable amount of our problem with the young which in the absolute will carry over appreciably into the older age brackets."

And now my tale is told. I hope that I have pointed up a few of the problems of dental education and dental health, and that I have not, as one who speaks from beyond the pale, wandered too far off the beaten track. Your task as a labourer in a chosen part of the Lord's vineyard involves considerable valuable voluntary service to your community in and through the field of Public Health. May I congratulate you on your selection of such a challenging profession in which to give of your best. May each of you find the work in your particular area most satisfactory and rewarding as you meet its many and varied problems. Omar, the Persian Poet, put the appeal in these words many centuries ago.

" Ah, Make the most of what we yet may spend
Before we too into the dust descend."

Procedures and Problems in Dental Practice Under Study

The National Opinion Research Center of the University of Chicago, at the request of the American College of Dentists, and in cooperation with the Walter G. Zoller Memorial Dental Clinic, is currently engaged in a study of procedures and problems of dental practice. Personal interviews with a nationwide sample of active, practising dentists are now being conducted. Results of the study, which will be useful to the entire dental profession will be made generally available in summary terms toward the end of the year. The main interest of the study is in the procedures and problems of dental practice, including their preventive aspects.

Fluoridation and The Prevention of Dental Disease*

JAMES M. MATHER, M.D., D.P.H.,** Vancouver, B.C.

Just about two years ago, I was asked to prepare a paper on fluoridation for the annual meeting of the Canadian Public Health Association which was to be held in Edmonton in September, 1955. My first reaction to that request was that everything that could be said had already been said about fluoridation, that its virtues had been amply proven, and that people were sick and tired hearing about it. Somewhat in spite of my better judgment, I was persuaded to prepare a paper, to deliver it in Edmonton, and subsequently, to publish it. [1] To my surprise, I have never had so much response to an address or to a paper. Long ago, I have run out of reprints of this paper. I have had requests for it from all over this continent and from as far away as Israel and West Germany. I had a number of requests for permission for its reproduction among the members of various official and voluntary health agencies. It was obvious that I was completely wrong at that time, people were hungry for factual information in regard to this important public health subject.

Now, here we are two years later. What is our present situation concerning interest in fluoridation? I find myself even more involved than I was two years ago. I welcomed this invitation to speak to you because I believe that the medical profession has an obligation to supply factual information from its experience and knowledge. So many self-styled experts have emerged that it behooves those with a solid scientific background to make their opinions available so that the public may be better informed.

If I need to justify my appearance before you tonight, I come as a physician who has spent a good many years as a public health worker, as a teacher, and as one who is deeply interested in the health and well-being of our people. What I have to say will be, primarily, from the medical viewpoint. I will spend the majority of my time on the subject of the fluoridation of communal water supplies, but before I go into that subject, I think I must build up the background. I must present briefly the problem we face in dental disease, the other avenues of approach to control, their deficiencies and insoluble difficulties and, from there, demonstrate to you why I think fluoridation is the only realistic approach to the solution of our present problem. Then, I would like to examine the history of fluoridation, its present status, its practicability, its cost, any possible ill effects, etc. Finally, I would like to give you my own personal opinions as to how it may best be implemented in your own community. I think that you will agree if I cover this ground or even the majority of it, I will justify the time that you have spent in listening to me.

To this audience, I think it would be absurd for me to present masses of statistics on the incidence of dental decay. You all know, only too well, the problems that you face in that regard. It is prob-

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* An address presented to meeting of the Dental Health Week, Alberta Dental Association in Calgary, April 1, and in Edmonton, April 2, 1957.

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ably the one disease that is almost universal, a disease that in this country affects all of us sooner or later, usually at an early age and throughout life. It is so common that we have almost reached the stage of considering it normal. I have had a rare opportunity, as a physician, to see this problem not only as it affects Canadians, but many people from other races and countries in the western world. In five years as a Hygiene Officer in the Royal Canadian Air Force in World War II and seven years as a Health Officer, I have peered into, literally, thousands of mouths. The inescapable impression one gains from such an experience is that no matter what your age is, no matter from what financial level you may come, no matter what your country of origin may be, dental decay is likely to be one of your major health problems. I could give you the details for these statements, but that I think is needless. I would think that you would agree with me and we could, by accepting my statements, leave time for consideration of some other matters which perhaps are not so well known to you.

If we accept the fact that dental caries is one of our major health problems in Canada today, what are the various approaches to its solution, excluding, for the moment, the consideration of fluoridation? The control measures really divide themselves into three groups, (i) Treatment, (ii) Nutrition, (iii) Oral Hygiene. Let us look at these three and assess how each is of importance, but how far they, each and collectively, fall short of the objective of attainment of dental health for our people.

(i) *Treatment:* It has been said, and with some justice, that present-day Canadian dentistry provides a de luxe service to about one-third of our people. In broad perspective, about all you have been able to do thus far for most people, is to attempt to repair the damage already done, and this repair is, more often than not, too little and too late. If we could get every child under early, adequate, and continual dental treatment from the age of three, we could do much to prevent the ravages of dental disease. The attainment of that goal is blocked by three major obstacles, lack of awareness and knowledge, the cost of the necessary care, and the lack of dental man-power. Let's dispose of the first two factors. We have a long way to go before we will be able to convince the general public of the necessity for preventive dental care in the preschool age group. We haven't even attained the objective of universal care for the child when he reaches school age. This is certainly something that we must keep ever to the fore in our teaching programme, but we must realize that its accomplishment is still far off. Coupled with the need for education is the financial barrier to universal treatment of the young child. Even if we could convince every parent of the need, many of them simply could not afford the cost. When some form of prepaid health care comes into being in Canada I think it will be a long time before preventive dental care becomes included in the coverage. However, neither the cost nor the lack of awareness of need poses nearly as difficult a problem as does the third factor, the lack of dental manpower. If every parent in the country came to his dentist with the necessary money clutched in his hand, the need couldn't be met. There simply aren't enough of you. We in the city of Vancouver are the best served area in Canada insofar as dentists are concerned. We have one dentist for every 1,449 people. In our neighboring city of Portland, Oregon, there is one dentist for each 650 people. In spite of that, the dentists of that city are all busy. The University graduates eighty dentists per year and has little or no room for students from British Columbia and the dental clinic at the University is booked solidly for two months ahead. The output of the five dental schools in Canada does little more than replace those lost by death and retirement and handle the natural increase of our population. In spite of the interest in Manitoba and British Columbia in new schools and your own dreams for possible

expansion, it will be many years before these will have any impact upon the tremendous backlog of dental disease in our people. We would all agree that adequate preventive and treatment services for all our people are ideals toward which we must constantly strive, but we must be realistic. These are not attainable within the foreseeable future.

(ii) *Nutrition:* Our food faddist friends will tell us that they have the problem of dental disease solved. All we need to do is to go back to the wholesome food of our ancestors and abandon the refined foods of our present-day civilization. Dental decay has been a companion of man from his earliest beginnings. It isn't a matter of regaining something we have lost. It is rather a matter of attaining something we have never had. The remains of earliest man show the ravages of dental decay. No one will argue against a well-balanced diet and its effect not only on dental health, but on the health of the whole person. Rather than following some fashionable fad as a panacea for all ills, we would be well advised to institute a sensible regime such as that set out in "Canada's Food Rules" as published by the National Department of Health and Welfare. We know the importance of Vitamin D in the growing child and in the pregnant or lactating woman. We know its relationship to calcium metabolism and we know many other fundamental facts in regard to proper and adequate nutrition. A programme such as set forth in "Canada's Food Rules" is simple, economical, and is more likely to be followed by the average person than is some set of restrictive rules or the provision of some exotic or expensive item of diet.

The item in our diet that gets the majority of blame for our dental ills is, of course, the refined carbohydrate. There is certainly evidence of its important relationship to dental caries. Diabetic children raised on a restricted carbohydrate diet show better than average dental health. There was a correlation between restricted carbohydrate intake in Europe and the rate of dental caries during World War II and the subsequent increase in dental caries when carbohydrate became freely available in the post-war years. All of this is important evidence and we must all admit that refined carbohydrate has a role in the production of dental caries. The joker in this regard is how you fit it into our present-day civilization. Refined carbohydrates are a part of our day by day life. How can you supply the motivation that will persuade a child that a perfect set of teeth is better than a substance which is associated in his mind and those of his fellows with rewards, pleasure, and oral gratification? I don't think the dental profession can be held entirely blameless for the once fashionable and unrealistic campaign for marked restriction of sugars on an indiscriminate basis. I think the height of something was reached by one of my dental friends who allowed his children to go on a candy spree once a week. I wonder how many illicit ones they had that he knew nothing about. Maurice Chevalier once said "At our age we must be reasonable." I agree with Becks [2] who stated that he felt restriction of refined sugars should apply only to cases of rampant dental caries. For the general public I would go back again to Canada's Food Rules. If we can assure the intake of a well-balanced diet with a moderate intake of sugar, I think that is as much as we can reasonably expect to accomplish from a dietary point of view.

(iii) *Oral Hygiene:* If one were to believe everything in the newspapers and magazines, all we need to do to have a perfect set of teeth is to use some special toothpaste on some particular brush, but you and I know that this is just not true. It wasn't until 1947 that any scientific evidence was produced to show that toothbrushing had anything to do with the control of denal caries. Fosdick[3] showed in 1947 that dental caries could be reduced by brushing but there is a very important proviso in his findings. This brushing had to be done immediately after eating and drinking. The difficulty

of achieving this objective is self-evident. No one would argue with the desirability of good oral hygiene from the viewpoint of the prevention of dental caries and for aesthetic reasons as well. However, the public as a whole, certainly has an exaggerated idea of its importance. Some day, somehow, they should be taught that probably the most important factor in any dentifrice is how much and how good it tastes rather than being harassed by conflicting and unfounded claims made by the manufacturers. They should realize, too, that thus far no one has proven that the addition of any substance to toothpaste has done anything to control decay, whether the substance be penicillin, the ammonium ion, fluoride, chlorophyll or any other substance.

Here, then, is where we stand. We know that treatment, nutrition, and oral hygiene all have important parts to play in the prevention and control of dental disease. However, we also know that they have not and cannot solve our problem for us. Where do we go for help? We go to what Black [4] of the University of Florida, has called the "Blessed Impurity." We go to the fluoride ion.

When the opponents of fluoridation claim that we should go slow because too little time has been spent on research, that our knowledge is incomplete, I must confess that I am amazed, since there has been no other public health measure that has received as long, as complete and as painstaking study. It was in 1892 in Great Britain that Crichton-Browne [5] suggested that this element might well be added to the diet in order to improve the condition of the teeth. On this continent the development knowledge goes back to the work of McKay in Colorado in 1908 [6] who first reported on mottled enamel, and to Churchill in 1931 [7] who showed that an excess of fluoride ion in the water was the cause. The developments after that time came thick and fast. Dean and Elvove [8] showed that a concentration of one part per million or less would not cause mottling but the children who drank water containing fluorine at that level would have a reduction of up to sixty percent in the expected incidence of dental decay. It was found that nearly one and a half million people were drinking water in the United States which had a concentration of over one and a half parts per million of fluorine and over four million used water supplies containing fluorides at a level of three-quarters of a part per million or higher. The next step was inevitable but none the less courageous. This was the addition of fluorine to water supplies which were naturally deficient in that element. Two cities in the United States, Grand Rapids, Michigan, and Newburgh, New York, and one city in Canada, Brantford, Ontario, began mechanical fluoridation of their municipal supplies about the same time in 1945 and have carried it on continuously for nearly twelve years.

What is the present status of mechanical fluoridation of commercial water supplies in the United States and Canada? In September, 1956, 1,400 American cities and towns with a total population of over 30,000,000, were using fluoridation. By the end of 1955, half the communities with a population of 500,000 or more and one-quarter of those between 10,000 and 500,000 were fluoridating their water. Some of the large cities using fluoridation are: Chicago, Philadelphia, Baltimore, Washington, Pittsburgh, Cleveland, Milwaukee, San Francisco, St. Louis, Buffalo. In the United States, one-quarter of water supplies are now using fluoridated water. In the first nine monhs of 1956, 6,000,000 people began to use fluoridated water. In Canada there are now twenty-five communities fluoridating their water supplies. These communities have a population of over 900,000 and range in size from a little over a thousand to nearly half a million. About half the population of Manitoba is drinking mechanicaly fluoridated water and Nova Scotia comes next in its coverage. There are no installations in Newfoundland, Prince Edward Island, New Brunswick, or Alberta. Nova Scotia has three, Quebec has two, there are eight in Ontario, two in Manitoba, six

in Saskatchewan, and four in British Columbia.

What have been the results of mechanical fluoridation with regard to the prevention and control of dental caries? There are many studies which might be cited, but I would propose to use those of Brantford, Ontario. I do this for several reasons. It is a Canadian city and these are results on our own people and studied by our own scientists. The people who carried out these studies are all known to me personally, and I have the highest respect for them. If I cited to you the Grand Rapids or Newburgh experience, you would be amazed at how close their findings are to those of Brantford. Thus, we can use Brantford as an example which typifies the experience and the results of many other similar studies.

This study at Brantford was most carefully set up and has been under the strictest control. It has been under the direct supervision of the Brant County Health Unit and both the Ontario and the Federal Departments of Health have participated in the study. One can judge what the people of Brantford feel about the whole thing when they named Dr. William Hutton, their Medical Officer of Health, the "Man of the Year" in 1955. I think, too, that Dr. Hutton merits attention from us all when we realize that he was the first Medical Officer of Health in the world to rid a city of the dread scourge diphtheria through the use of diphtheria toxoid. One cannot lightly dismiss his findings, a man who is one of the recognized public health leaders in the world today.

I think it is significant that the latest publication concerning the Brantford results is entitled "Final Report of Local Studies on Water Fluoridation in Brantford." [9] It is obvious that Dr. Hutton and his co-workers feel that their results are so conclusive that no further publications will be needed. This report is a combined engineering-medical-dental publication.

There is one remark of Dr. Hutton's in this report which I think merits direct quotation. He refers to McKay's development of the fluorine-dental caries hypothesis, namely, that certain amounts of fluorides are necessary in order that human teeth shall not decay. Then, Dr. Hutton goes on to say, "Ten years' study of water fluoridation in the United States and Canada has elevated this hypothesis to the status of a natural law which Aristotle defined as 'that which has the same authority everywhere and is independent of opinion.'" Thus, what I have to say about the Brantford results is applicable to the use of fluorides anywhere.

What have been the results of this long study in Brantford? Let us look at them from the three viewpoints noted above, that is, engineering, medical, and dental. The municipal water engineer, states that in the entire period of ten years the operation has shown no problems from the engineering viewpoint. It is simple and easily controlled. Both sodium fluoride and sodium silicofluoride have been used. This water system serves 50,000 people. The initial cost of installation was $500.00. Cost of repairs, maintenance and operation has been negligible. The annual per capita cost for the chemical required has been from nine to fourteen cents. Both Dr. Hutton as Medical Officer of Health and the local hospital medical staff have gone on official record as stating that they have seen no ill effects that could be attributed in any way to the use of the fluoridated water. The dental results are, of course, the most interesting. A comparison is made of dental disease in the pre-fluoridation period 1944-45, and after ten years of fluoridation, 1955. For deciduous teeth only, the D.E.F. rate (decayed, extraction indicated and filled) was reduced 42.1% and in the permanent teeth only, the D.M.F. rate (decayed, missing and filled) was reduced 53.9%. The group observed ranged through from 5-16 years and the reduction was much greater in those children who had had exposure to fluoridated water throughout the entire period of enamel development but there was a significant reduction in all age groups.

When you look at these results you

wonder why there is any controversy, why this procedure has not received universal adoption. Here is a simple procedure which is very easily carried out at a low cost, which has absolutely no ill effects, and which will result in approximately a two-thirds reduction in the expected rate of dental decay. You have a perfect right to ask that question, but unfortunately, the answer to the question is not simple. The issue has, in many cases, got so far away from the original truth and it has become so beclouded with emotionalism, with fantastic charges, with groundless fears, that the poor average layman has become so confused that he doesn't know whether the proponents are agents of the Kremlin or the Aluminum Corporation of America. You and I as dentists and physicians and as responsible members of the community, have a very definite part to play in the adoption of this important health procedure in our various cities. I would like to give you my own ideas as to just what I think our responsibilities are and how we may best approach the problem.

Who is in favour of fluoridation and who is opposed? Again, it isn't a simple matter of black and white. There are many shades of grey. In favour of fluoridation is every national, medical, dental, waterworks engineering and similar scientific organization in the United States and Canada. The British Ministry of Health sent a scientific team to this continent to investigate fluoridation of water supplies. Their report was unanimously favourable and the first city in Great Britain began fluoridation in 1955. [10] Thus, scientific opinion is overwhelmingly in favour of fluoridation as a desirable, as a safe, as a practical, public health procedure. Granted, individuals in all of these professions may be opposed, but they are few and far between. Their motives for opposition are various, — honest difference of opinion, lack of knowledge, or even in some cases, I fear, they may be opportunists riding a band wagon for their own peculiar purposes. However, the fact remains that the professions who know most about the subject have all gone on record as being in favour of supplying fluoridated water to our people.

Who, then, makes up the opposition to this important health measure? I think you must make a clear distinction between active and passive opposition. There is a very small, hard core of active opponents. There is a much larger group of those who while not actively opposed, are impeding the implementation of the measure by their negative attitude and their apparent fear of becoming embroiled in what, on the surface, appears to be a controversial issue. This is well illustrated by a survey of householders carried out recently by the Greater Vancouver Health League. They called at 1,185 homes and left educational material favouring fluoridation. They did a follow-up visit to determine the attitude of these householders to municipal fluoridation. They found that 78.8% of the residents were in favour of fluoridation, 10.1% were opposed, and 11.1% were undecided. That majority of favourable opinion, one would think, would be ample to insure a favourable vote in the coming plebiscite in December. However, here is the disturbing fact. Of the 78.8% in favour, only 9% expressed a willingness to take any positive part in the current campaign to bring about fluoridation. Unless something can be done about changing this laissez faire attitude, there is a very good chance that an unfavourable vote may occur.

Let's look for a moment at your really active opposition. I'll give you my own personal ideas of what you should do about them. In the first place, realize that the chance of changing their opinions is nil. The opponents will vary from city to city but they do tend to fall into a common pattern. You will find the unorthodox and controversial treatment groups to be very prominent, very active, and extremely vocal in their opposition. An occasional newspaper columnist will be opposed but only rarely will you see a newspaper itself taking a stand against the measure. The vendors of pamphlets

and faddist foods will be well to the fore. The majority of opposition will come from those groups which have, in the past, opposed similar enlightened health advances; vaccination against smallpox, diphtheria toxoid, pasteurization of milk, chlorination of water. In our own city, no physician, dentist, water works engineer, chemist, indeed, no member of any of the recognized scientific professions, has declared himself in opposition. This reaction of the scientific professions in Vancouver is the general picture across the country, only rarely will you hear of any of them being opposed to fluoridation. How should you deal with these or similar opposition? Realize at the outset — you have limitations that do not apply to them. Your statements must be founded upon and confined to scientific fact. They know no such bounds. Thus, you would be extremely unwise to engage in debate with them. You do have a responsibility to get your facts over to the public but I would strongly recommend that any public meeting you set up be sponsored by your own organization, presenting only your own side of the picture. Your opponents have the same opportunities open to them and I can see no justification in your providing them with a platform. Similarly, at your meetings, a question period is most desirable, but nave the questions submitted in writing to the speakers. If you allow questions from the floor, you will find that the questions are only an excuse for a speech by the questioner. I have had a fair amount of experience with the various approaches to the dissemination of information on fluoridation and over the years I have developed a very firm policy as to what I will and will not do. I will gladly speak to any group which wants my opinion on the merits of fluoridation and what the medical profession thinks of and has found in its research in regard to this matter. I will not appear on the same platform with nor engage in debate with the opponents. I refuse to become a martyr to fluoridation. I believe that I have a responsibility to disseminate accurate medical information to the public but having done this, I maintain it is a responsibility of the public to make up their own minds as to what they want done. This is a democracy and I maintain that the rule of the majority should prevail. I have a lot of faith in the intelligence of the average man. If you present him with the factual material, I believe that in the long run he will make the proper decision. This may seem like an abrupt dismissal of the active opponents, but I believe it is much more important to concentrate upon getting your information across to the general public.

It has been said that a large body of the public are uninformed or misinformed in regard to fluoridation. Therefore, I think your major effort should be directed toward getting factual scientific material to these groups. As dentists, you have a dual responsibility; as individuals and as members of an organized profession. You might ask where, as individuals, you have an opportunity to carry out this task. You have the opportunity every time a patient steps into your chair. As a respected citizen in your community, you have the opportunity in all your social contacts, in your service clubs, in your contacts with schools, and in numberless other day by day meetings with your fellow citizens. Your opinion is respected as an expert in your field. Don't for a moment minimize your influence; rather, use it to the full. Your second responsibility is, of course, as a member of your local dental society. Be prepared to participate in its acivities, whether it involves a talk to a service club, to a Home and School Association meeting, writing a newspaper article, or appearing on radio or television. Too often, in professional societies, the load is carried by a very few willing members on behalf of the approving but passive majority. As a dental society you have a responsibility as a corporate body. You should function as resource consultants to interested community groups. You should be prepared to supply them with reference material from the professional literature, with

speakers, with advice. I feel very strongly that the actual campaign for fluoridation should be headed up by lay rather than by professional people. The obvious leaders are those who will potentially receive the most benefit, that is, the parents of young and growing families. Thus, I think voluntary groups, such as women's associations, Home and School Associations, Junior Chambers of Commerce, etc., are the ones which should lead the battle.

The actual method of inception of fluoridation of a communal water supply will vary from place to place. Some communities have begun fluoridation through a decision of their municipal council. Others have decided the issue through a plebiscite of the eligible voters. I understand that, in Alberta, a plebiscite is required. In Vancouver, a vote will be held in December. In December, 1955, the Canadian Section of the American Water Works Association reported that of the first seventeen installations in Canada, fifteen were by action of municipal council and only two by municipal vote. One could argue that the general public is not competent to vote on a technical issue and that municipal councils should be guided by advice from the scientific experts who have recommended it so overwhelmingly. Those who propose this course draw a parallel with the legislation concerning chlorination of water, pasteurization of milk, etc. [11] Even though it would probably be easier to agree with them, I do feel that there is an inherent danger. As I have noted, the issue is now so emotional in nature, that I am afraid it is something that must be decided by the people themselves and that is where we have time with us. I don't for a moment believe that it is a question whether your city will or will not have fluoridation. Rather, it is only *when* you will have it. I sincerely believe that it is inevitable in your city and in every other municipal supply in this country and in the United States. People are not easily fooled, and if they are deceived for a period, they will see the truth eventually. Gradually, people are seeing the boon of fluoridation and it is only a matter of time until they demand it for their own community.

Thus, in summary, fluoridation of communal water supplies is one of the greatest public health advances in our century. You and I, as dentists and physicians, must do everything we can to hasten the day when this city and all others in Canada enjoy the boon that it will bring to the children and, as the years go on, to the population as a whole, — the privilege of dental health which you and I have never had the opportunity to attain.

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"The sciences bring into play the imagination, the building of images in which the reality of the past is blended with the ideals for the future, and from the picture there springs the prescience of genius."

A Study of Food Habits of 4,425 Toronto School Children*

JANET WARDLAW,** ETHEL BEAMISH,† and CORINNE TRERICE,‡ Toronto, Canada.

Much effort has been expended in recent years in assessing the adequacy of diets by measuring food consumption. Adequacy is judged either by comparing the intake of essential food groups with an accepted standard or by determining from the data collected, the intake of nutrients.

The practical difficulties involved have led to the adoption of many different methods often with accuracy sacrificed to expediency. The inherent differences in peoples' judgment and the variations in amounts and kinds of foods eaten make the survey of food intake a relative matter. With the use of large numbers of subjects and a short period of time, the use of the recall system to determine the pattern of foods usually consumed seems justified. Over a twenty-four or forty-eight hour period, the recall system may be used to demonstrate quickly the shortcomings in food habits and the results may be used in planning an educational program[1].

The Toronto Nutrition Committee undertook a one-day food intake study in order to:

(a) determine the eating habits of Toronto school children in grade eight.

(b) assess the adequacy in terms of intake of essential food groups rather than nutrient content.

(c) arouse, by use of the results, active interest on the part of parents, teachers and others concerned with the welfare of children.

With similar objectives in mind, a one-day study was carried out by this committee in the fall of 1952 using grade six children in Toronto public schools[2]. With the use of a large sample (4,734), a longer recording period was not considered necessary for the purpose of the survey. The survey was done on a Wednesday because the mid-week period was considered to be most representative. In the 1952 survey it was found that the intakes of citrus fruits, vegetables, whole grain cereals and vitamin D were particularly low when Canada's Food Rules were used as a criterion.

Work done in Marysville, New Brunswick[3] indicated that as children enter adolescence their eating habits are adversely affected. Because of interest in the adolescent group, the grade eight children were used as subjects for the present study. With few exceptions, grade eight pupils in Toronto public schools are twelve years of age or over.

Procedure

A one-day survey using 4,425 grade eight pupils was carried out on Wednesday, February 1, 1956, by the Toronto Nutrition Committee with the co-operation of the Board of Education and the Department of Health. Record blanks and instruction sheets for teachers were distributed by the Board of Education. Teachers were cautioned against giving special emphasis to nutrition education for several days prior to the survey. The pupils were instructed to record their food intake giving an indication of the size of servings.

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Members of Toronto Nutrition Committee.
‡ Published simultaneously with Canadian Home Economics Journal.

A detailed outline of scoring procedures was prepared. In addition to foods listed in Canada's Food Rules, an arbitrary system of estimating the total intake of sweet foods was established. An *unsatisfactory* daily intake of foods recommended for children was considered to be:

Milk—less than 1½ pints.

Citrus Fruits—less than 1 serving.

Vegetables—less than 2 servings of vegetables per day other than potatoes. In addition the number of pupils receiving no green or yellow vegetables was recorded.

Cereals—less than one serving of a whole grain cereal.

Meat—less than one serving of meat, fish, poultry or meat alternates.

Vitamin D—no source of vitamin D.

An unsatisfactory intake of foods other than those recommended for children was considered to be:

Sweet foods — more than three servings of sweet foods (cake, candy, pastries, cookies, soft drinks, doughnuts, sweet buns, jams, honey and syrup).

Scoring was done by members of the Toronto Nutrition Committee, dietetic internes and home economics students. The final results were expressed as percentages of pupils having unsatisfactory intakes of the food groups studied. Results were tabulated for each school and for the city as a whole.

Results

In Table I the results for the city as a whole are shown.

TABLE I

Results Expressed as Percentages of Children with Unsatisfactory Intakes of Food Groups Studied.

Food Groups	% with Insufficient Intake
Milk	55%
Citrus Fruits	31%
Vegetables	67%
Vegetables — Green or yellow	43%
Cereals	64%
Meat	4%
Vitamin D	71%
Food Groups	**% with Excessive Intake**
Sweet Foods	30%

Each school received its own results to compare with the city totals. It is appreciated that the individual school results are not as significant as the overall picture but they are of value in arousing interest among parents, teachers and students. While deviation from the mean was noted, particularly in the very high and very low income areas, a typical pattern was apparent throughout the city.

Discussion

The consumption of some foods was less than recommended. However no information has been obtained which might be used to demonstrate the existence of malnutrition or hunger in this group. The results are discussed below according to the food groups studied.

1. Over half the grade eight children did not get the recommended 1½ pints of milk, even when cheese and milk dishes were counted. Since these children are in a rapidly growing stage, this finding is of the utmost importance, because of the contribution which milk makes to the supply of calcium as well as protein and riboflavin.
2. One third of the students did not receive a serving of citrus fruits such as grapefruit or oranges. Despite some educational efforts, no improvement has taken place since the previous study. Since citrus fruits are the most concentrated sources of vitamin C, essential for healthy tissues, this lack is unfortunate and could easily be corrected.
3. Forty-three per cent did not receive green or yellow vegetables. Fourteen per cent of the pupils had only potatoes. This represents a better picture than the previous study where 50 per cent of them had no vegetable except potato.
4. Many of the children ate a good breakfast but in two-thirds of the cases, breakfast would have been improved by the use of a whole grain cereal. Such a food, since it is taken with milk, makes a substantial nutritional contribution not supplied by bread and jam. The average daily bread consumption was five slices per child.
5. Meat, one of the most expensive items in the diet, as in the previous survey, topped the list for widespread use. Only

four per cent did not receive any meat, fish, poultry or meat substitute. It is of interest to note that 53 per cent of the children did not eat an egg on the day of the survey.

6. The need for vitamin D is particularly high during periods of rapid growth. This is apparently not commonly realized when 71 per cent of the youngsters were not given any vitamin D. This fact, coupled with lack of sunshine at this time of year, makes it imperative that some sound educational procedure be developed to increase the use of vitamin D throughout the entire growing period.
7. Sweet foods are difficult to count. More than three servings of the sweet food group was considered to be an excessive intake. One third of the children exceeded this limit according to the scoring system used. As well as having a detrimental effect insofar as dental caries are concerned, it was evident that sweet foods replaced essential protective foods.

This survey has limitations due to several factors. In recording done by children, inaccuracies can be expected. The adequacy of the arbitrary standards set for assessing food intake in relation to Canada's Food Rules can be questioned. The differences in background and experience of those scoring the records and the number of scorers involved further add to the inconsistencies. However, the fairly consistent pattern from school to school indicates that with large numbers the slight inconsistencies may be reduced in significance.

With this survey a basis for planning an effective nutrition teaching program has been established. In addition, the students scoring the survey received valuable insight into the eating habits of school children.

After a consideration of these results it would seem that the economic situation is not as important a factor determining eating habits as is sometimes believed. Young[4] has shown that the educational level of the homemaker is a determining factor in her appreciation of the importance of nutrition to her family.

Nutrition education which will reach both the parent and the child is essential and must be made more effective if the food habits of children in this coming generation are to be improved. The responsibility of all teachers in promoting healthful eating based on sound nutritional concepts, cannot be underestimated.

Summary

A one-day survey of 4,425 grade eight pupils in Toronto public schools was done on Wednesday, February 1, 1956, by the Toronto Nutrition Committee. The amounts of milk, citrus fruits, vegetables, meats, cereals and vitamin D were considered and of these only meat appeared to be used to a satisfactory extent by the group as a whole. The lack of a vitamin D supplement was particularly marked. The significance of the results are discussed from the point of view of an educational program.

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There is a gap or at least a lack of effective integration between dentistry and medicine as indicated by the daily mode of practice of a great proportion of physicians and dentists. Neither profession is entirely to blame for this state of affairs since it is largely a product of the separation of the two professions during the period of undergraduate training. Thus neither group becomes fully aware of the biologic problems of the other or knows how to approach their solution when the need for cooperative action becomes evident. Dentistry is trying to correct this situation by offering courses in oral or dental medicine. But the mechanism for effective integration of dental and medical services has not been developed. A new approach based on the concensus of thinking of leaders in both professions is needed. For the most effective integration of the two professions and development of a common point of view the educational programs of each should include a considerable amount of side-by-side training of dental and medical students.

John Oppie McCall, D.D.S.
J.A.C.D. March 1957.

Tax Deductibility on Registered Retirement Plans

J. T. STADDON, Toronto, Ontario*

Reference was made on Page 231 of the April issue of the Journal to the Resolution made by the Minister of Finance to amend the Income Tax Act, so that premiums paid towards specified retirement savings plans would be deductible for taxation purposes. The necessary legislation was enacted on the 12th April, 1957, and became effective as from the 1st January, 1957.

There are still a number of technical points to be agreed upon between Companies undertaking such plans and the various Government Departments involved. However, sufficient details and principles are available for us to give a general picture of the benefits to be secured and the procedure to be adopted. A broad outline of the concession has already been circulated to members from the Administration Office of the C.D.A. Pension-Assurance Plan, but it was not then possible to go into further detail or to deal with many of the questions which we knew would arise.

As you are aware, premiums paid to Registered Savings Plans may be deducted up to a limit of the lesser of 10% of earned income, or $2,500, each year. That, in a short sentence, is the advantage conferred, and it is a considerable assistance to those having to provide for their retirement entirely from their own income. The prescribed conditions to which a Plan must conform, before it can qualify, are as follows:

1. There must be no right to Loan Values;
2. There must be no right to Cash Surrender Values, although this is qualified by allowing a Cash Surrender Value to be taken, in which case the proceeds from such Surrender are added to the participant's income for that year and taxed accordingly, but the rate of tax to which it is subjected will never be less than 25 per cent;
3. The contract cannot be assigned, which means that it cannot be deposited with a Bank or other sources of finance as security against a loan;
4. The ultimate proceeds of the contract must be used for the purchase of a level annuity for the life of the participant and such annuity must commence before the age of 71 years. The annuity can, however, be subject to a guaranteed period not exceeding 15 years, and may provide for the continuation of benefits on a Joint-and-Survivorship Annuity basis on the lives of the participant and spouse.

It is specifically allowed to add supplementary benefits to a Registered Savings Plan, such as a Capital Sum Death Benefit, Family Income Benefits, Disability Waiver of Premium, etc., but the portion of the premium attributable to any such additional benefits is not deductible. However, when arranging a Retirement Plan, this essential protection can be obtained more economically by adding them to the basic deductible contract.

It follows that any Life or Pension-Assurance contract having an element of savings can be suitably amended to qualify for deductibility. It is proposed that the necessary Registration of a Plan will be made by the individual submitting with his Income Tax return the initial receipt for premiums paid. This receipt will be supplied by the Insurance Company and will state the eligible premium. Thereafter, an annual receipt will be supplied to support the claim for tax relief.

As the payments into the Pension Plan

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escape taxation, it is a natural sequel that the Pension when drawn will be taxable as earned income. This is readily acceptable to anyone just starting a Plan under which all his premiums will qualify for deduction, but no doubt those who have already paid premiums on which no tax relief has been secured, will wonder what affect this will have on his benefits. This is one of the points where the principle is agreed, but where the actual operation of the principle has not been finalized. It is proposed that the portion of the benefits purchased by the premiums on which no tax allowance has been given, will not be taxed as earned income, so there is theoretically no loss or financial disadvantage involved in converting existing contracts to Registered Savings Plans.

There is one additional important point to remember. Many members are entering into contracts which will provide a specific pension from the age of 55 or 60. Now it may happen that when the maturity date arrives, they are still actively in practice and intend to continue for a number of years. As the annuity would be added to their income and taxed accordingly, they might be paying just as high a rate of tax on the benefits as they secured relief on the premiums, or even higher. In such circumstances, there is nothing to prevent their postponing the drawing of the pension until a later age (as long as it is not after age 71) and ultimately receiving an increased pension on which a lower rate of tax would probably be payable.

The following two examples will readily illustrate the substantial savings to be made during the premium paying period:

(1) A man, aged 32, with a wife and three children, and an earned income of $12,000 a year can deduct a premium up to $1,200. The tax saved amounts to $336, reducing the actual cost of his pension to $864 in that year. As his income increases and his dependents' allowances reduce, so the proportion of tax saving will increase.

(2) A man, aged 55, with a wife and no other dependents, earning $17,000 a year can deduct a premium up to $1,700. The saving in tax in this case would amount to $646, reducing the actual cost in that year to $1,054.

From this it will be seen that at almost any age the concession offers a considerable inducement to invest up to 10% of earned income in a Registered Savings Plan. This summary has by no means touched upon all the practical problems involved, but it does give an outline of the main features of interest to members. Specific enquiries and requests for quotations will be welcomed at the Administration Office and given prompt attention.

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Formula for Human Progress — When every farmer leaves his acres a little better than he found them; when every worker leaves the imprint of human honesty and human dignity on every task performed, however humble; when every lawmaker helps to render human relations a little more equitable; when every judge leaves his court a tradition of a little more justice; when every doctor, every teacher, every investigator work more for love and less for hire; when every statesman leaves the path of compromise, conciliation and approximate justice a little more accessible and secure, we shall have something greater than fat cattle, marble palaces, tall buildings, radios defiling the pure ether with black lies, and mighty airships spewing pain and death on women and children. Even then, we shall not have perpetual health, not even perpetual youth. But we shall be well on the road to earn the designation: wise men. We shall still struggle for life and light, but shall have left behind the follies, the fears, and the fights of the jungle.

Anton J. Carlson, The Fundamental Sciences — Their Role in Medical Progress, 1939.

ABSTRACTS

Radiation Hazards in Dental Radiography

SYDNEY BLACKMAN, L.R.C.P., M.R.C.S., D.M.R.E.Camb.,
and J. R. GREENING, Ph.D., F.Inst.P.

Dental practice, perhaps more than any other branch of medicine, has become closely allied with, if not dependent upon, radiography for diagnosis and control of treatment. With the daily increase in the utilization of X-rays in the surgery of the general practitioner, the problems of excessive radiation, both to the patient and to the operator, cannot be over-emphasized.

All radiation is dangerous, whether it be the beam of X-rays emanating from the tube, radiation leaking through the tube head encasement, or the scattered radiation from the patient or other objects. Again, the effects of accumulated radiation received by an individual are not entirely eliminated or dissipated merely by withdrawing himself from the field of operation on vacation. After considerable dosage, certain permanent changes take place within the framework of the person, which may affect his skin, his eyes, his blood vessels and general cellular formation, and, under certain conditions, biological mutations may be transmitted to succeeding generations.

Methods of Reducing Radiation Exposure of Patient:

(a) Use the Fastest Films Compatible with the Detail Required. – This reduces the exposure time.

(b) Reduce the Area Irradiated to a Minimum. – The amount of primary radiation is proportional to the intensity of the X-rays delivered, whilst the amount of secondary radiation varies with the volume of tissue irradiated. The smaller the field, the less the stray radiation and the less volume dose to the patient from both primary and secondary rays.

By the introduction of a lead or other restricting diaphragm at the outlet of the tube head, the size of the emanating X-ray beam can be limited, and the rays confined to the minimum necessary area on the skin surface of the patient.

Instead of the pointed plastic cone attached to the tube head, it is believed that some advantage might be gained in accuracy of positioning and in reduction by the use of a narrow protective cylinder. This would not only have the effect of confronting the beam to within the required diameter, but would also reduce scattered radiation from the plastic cone itself.

(c) Ensure that as high a proportion as possible of the radiation issuing from the X-ray tube is radiographically useful (i.e. penetrates the patient and reaches the film).

This is achieved by (i) using the highest kV that gives adequate contrast; (ii) inserting an aluminium filter in the beam to absorb its least penetrating components, which are largely absorbed in the skin.

(d) Use long focus-skin distances, so that the X-ray intensities on the patient's skin and at the film do not have too large a ratio. In dental radiography it is recommended to adopt a focus-skin distance of not less than 8 in.

It follows from both (c) and (d) that X-ray units which employ both very low voltage and very short focus-skin distances, should be deprecated as producing greater patient dose per film.

(e) Protect Critical Tissues with some X-ray Absorbing Material. – In view of the large amount of lymphatic tissue in the region of the neck, which is most sensitive to radiation, it might be contemplated that a shield or bib of lead rubber be worn to protect the patient's neck from secondary radiation. Similarly, the eyes should be shielded with lead goggles.

(f) Reduce the Number of Exposures to a Minimum. – Repetitive and control radiographs should be limited to absolute necessity.

British Medical Journal
March 5, 1957, Vol. 102, No. 5.

Planning Surveys to Assess a State's Oral Health Status

DAVID F. STRIFFLER, D.D.S., M.P.H.

If one is to plan, execute, and evaluate State dental health programs in a logical manner, comprehensive information concerning the State's dental health needs and its resources is indispensable.

What do the people consider to be the oral health problems? What do the members of the dental profession see as the problems?

What is needed in the way of health education? What do people know about dental health? What do they do about it?

What is the distribution of the population by geographic area, by age, and by ethnic group? What are the trends in population growth and movement? What about the fluoride content of the water supplies?

What is the prevalence of the major oral diseases?

How many dentists are there in official agencies? in private practice? in industry? How many auxiliary personnel?

What is the status of physical facilities?

Are there blocks to the attainment of optimum oral health?

Some of these questions can be answered simply by a search and study of existing source materials. Others require more formal surveys, such as questionnaires, personal interviews, or even clinical examinations. Then the data obtained in answer to specific questions must be analyzed and integrated to provide a complete picture of the State's dental health status.

At first glance the job may appear to be too overwhelming to tackle, but the State dental public health director and his staff can, with the help of others, accomplish it, bit by bit. Actually, of course, surveying is a continuing process, for conditions next year will inevitably differ from conditions this year.

EDITORIAL

One Book Review—Misplaced

Readers of this Journal are aware that a special section devoted to Book Reviews is a routine feature and is usually found elsewhere than in the editorial. We do not propose to make a practice of changing that arrangement. However, a book has come to our attention which has caused us such consternation that it seemed more appropriate to make comment here.

Prentice-Hall Incorporated were kind enough to supply us with a review copy of a book by Dr. S. Joseph Bregstein, entitled "Interviewing, Counselling, and Managing Dental Patients." On the jacket of this text is the following statement by Dr. Philip Ament, Editor of the Journal of the American Society of Psychosomatic Dentistry—"Without hesitation, we can say that Dr. Bregstein has embodied in this book the very latest in psychological approaches to our everyday contacts in dentistry. He shows how to make your practice a happy worthwhile endeavour. Enjoy your work by adhering to the principles and counsel of the author."

Well now, we should, respectfully, like to disagree with our editorial confrère. We can make no such recommendation.

This is a day and age when merchandizing has reached a high peak of attainment. Advertising has become a highly specialized vocation. No longer are we content to manipulate an automobile more than two or three years old because the new ones, they tell us, are longer, lower and sleeker and so much easier to drive. And with all the new tooth pastes on the market we might almost discount the need for the services of the dental profession. We have become so inundated with high pressure merchandising methods that we have become almost inured to them and in fact no one seems to express too much concern over extravagant or blatant advertising in the commercial field.

When we enter the professional realm, however, we are governed by an entirely different set of values, and although undoubtedly certain aspects of dentistry lend themselves to commercial methods, most of us deplore it when any of our confrères resorts to such tactics. The objective of practising a profession is opposite to that of carrying on commercial activity. The aim of business, generally, although desirable services are performed, is to make as large a profit as the market and competition will permit. This is legitimate in commerical life but is the antithesis of practising a profession.

A professional man cannot sell health services. Immediately he attempts to do so his services deteriorate, for the em-

phasis becomes placed on profit rather than service. The best possible service to the patient must always be the first motive.

No one will discount the value of an adequate case presentation and a full and frank discussion of the economic factors involved prior to the commencement of treatment. But these discussions should be conducted in good taste and not according to commercial or high pressure methods.

Let us look, however, at some suggestions we find in the book. After completing the cementation of an inlay, it is suggested that you call in your assistant, a mythical "Miss Smith". Now hand your patient a mirror and say, "Miss Smith, I want you to see another of our perfect inlays. Look at the way it fits at the gum line." When, however, your restoration has been a porcelain or acrylic one you once more call in the long-suffering Miss Smith and say "Miss Smith, you must look at this restoration I have done for Mrs. Jack. Look at that colour match. Why it is so perfectly natural, it looks as though Mrs. Jack just grew a new tooth."

Now if your patient has any qualms respecting the cost of your services, that hurdle should be easy to clear by the following approach: "We welcome those who are on a budget. We can arrange a liberal convenient payment plan for you. But finances will not be a problem once you have experienced the confidence that is so necessary for promotion. This feeling of looking successful by means of good dental grooming does make one outstanding and sought after. One of our patients who was a bank clerk had front teeth that were unsightly. Two years ago, we gave her confidence by placing porcelain jacket crowns on all her front teeth. Today she is the only woman in the bank who is assistant manager at a salary more than twice what she earned before. You owe it to yourself and to your future wholeheartedly to accept what I am now going to present to you."

If you have a patient somewhat reluctant to accept the fact that you believe inlays are to be preferred to silver amalgam restorations the following by-play may help you. "We had a patient a few years ago who wanted only silver fillings. She had the same teeth filled about four times before I examined her. She was finally convinced of the advantages of inlays. She's quite happy now. But can you imagine how much was spent in having teeth filled four times before the needed restorations were finally accepted."

For those of you having difficulty *selling* prosthetic appliances, one or two approaches can be made. First of all, "dramatize your presentation with enthusiastic descriptions about your work." For example: "Mrs. Smith, it wasn't until I saw many of these new type bridges in our patients' mouths that I really appreciated how many advantages they have over those we used to recommend. This bridge is sturdy, and will withstand chewing over long periods of time. There has been little or no breakage of the life-like teeth that are baked into the precious metals. There will be maintained good normal chewing surfaces over longer periods. And look at the beauty of these teeth! They photograph well, and on movies or a picture they look real."

If your patient tells you that his friend paid much less for his denture than the fee you propose to assess you might disparage this friend's dental care, with suitable facial expressions, we suppose, in the following fashion: "We cannot rely upon quickly made restorations for long term use. These are usually sent to a laboratory after a quick impression, no preliminary fitting of important parts, with instructions to the technician to finish the case in a day or two. You wouldn't want a laboratory denture made without all the advantages available for you through the careful planning and design of your dentist."

These examples should be sufficient to indicate why we were not impressed with the text. Lest the reader feel, however, that we are overly critical, the book does have a lovely cover.

BOOK REVIEWS

The Design and Construction of Removable Orthodontic Appliances. Prepared by: C. Philip Adams. Published by: John Wright & Sons Ltd., The Stonebridge Press, Bath Road, Bristol 4, England. Pages: 96. Price: $3.00.

This well illustrated ninety-six page volume is a welcome addition to Orthodontics, as it covers a field of mechanics that has received scant attention in the literature. Despite the scope suggested by the title, the book deals only with upper and lower base plate appliances, and does not include Andresen, Crozat, or positioner types.

Possibly the most outstanding feature of the volume is the presentation of some interesting and unusual methods for adding extra-oral traction, tooth rotation, and intermaxillary elastic forces to these removable appliances without resorting to the addition of cemented auxiliaries.

Wire fabricating and manipulating techniques are described in minute detail: in fact some forty odd pages are devoted to fundamentals. The Adams, or modified arrowhead clasp, is presented as the means for increasing the retention efficiency. Some of the devices for guiding and controlling auxiliary springs are particularly ingenious and could well be adapted to fixed appliances as well.

A short chapter is devoted to stainless steel soldering, but welding techniques are omitted.

Milton R. Culbert

Hypnosis—Its Meaning and Practice. Prepared by: Eric Cuddon, M.A., B.C.L. Published by: Clarke, Irwin & Company Ltd., Pages: 175. Price: $2.10.

This book gives an introduction to hypnosis with quite good definitions.

Chapters on Induction of Hypnosis, Degree of Hypnosis and Termination of Hypnosis are clear and easily understood by the lay reader. However this is as far as the reader need go in this text as there is little more of value here.

The reader who has read any text on Hypnosis will already have the basic knowledge which is reprinted here. Furthermore, there is no attempted relationship of hypnosis to the practise of dentistry so the general dental practitioner or the experienced hypnotist has little to gain by reading this text.

W. H. Coleman

THE LIBRARY

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

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THE ASSOCIATION

Fluoridation — American Medical Association

Following is the official statement which has been issued by the American Medical Association in response to inquiries regarding its stand on water fluoridation. This statement is now available for publication.

"The American Medical Association has not changed its position on the fluoridation of public water supplies, to prevent dental caries in children.

The House of Delegates at its December 1951 meeting unanimously endorsed the principle of fluoridation of public water supplies, and this position still stands.

The action of the House of Delegates at its November 1956 meeting has been misinterpreted to mean that some change in the AMA's position has taken place; this is not the case. At that time, the House of Delegates directed the Association's Council on Drugs and Council on Foods and Nutrition to conduct a joint study of all presently available information concerning the fluoridation of public water supplies and that a documented report of the findings, together with any recommendation arising from these findings, be presented to the House of Delegates at its meeting in Philadelphia in December, 1957."

First Town in Alberta Approves Fluoridation

Fairview (pop. 1000) a town in the Peace River district of Alberta voted on March 18th by an overwhelming majority to introduce fluoridation: of 178 persons casting ballots, 163 voted in favour. There were 14 against and one spoiled ballot. Believed to be the first municipality in Alberta to hold a plebiscite on fluoridation, Fairview electors voted 92.1 per cent in favour. Fluoridation of the water will be incorporated into the town's new water plant.

CORRESPONDENCE

Dear Mr. Editor

After reading Dr. Culberts' excellent article in the January edition of the C.D.A. Journal, I am convinced that dentists take a back seat to no one when it comes to being pushed around. What is even more surprising is that we are doing nothing about it. There seems to be an appalling disinterest among members of the dental profession with regards to our professional status. There certainly seems to be no strength in numbers, for even with our large membership in the association, as a group we are not strong because we are not united. What is needed is more unity so that we can take a firm stand with regards to our suggestions to the government, dentist — laboratory relations, fees, D.P.H. education, public relations, etc.

If a co-ordinator or co-ordinating body is needed, let's have one, and maybe dentistry will have a chance of rising from her last place position in the scale of professional earnings, investments, morbidity, and I am afraid, prestige also.

H. C. Cook, D.D.S.,
O'Sullivan P.O., Ontario

THE CORPS

Brigadier E. M. Wansbrough, accompanied by Lt.-Col. B. P. Kearney, attended Exercise "Cancellus" conducted by the R.C.A.M.C. School at Camp Borden. They also inspected the R.C.D.C. School now nearing completion in the same area. Lt. Col. Kearney has recently assumed command of the R.C.D.C. School from Lt.-Col. I. A. L. Millar whose new appointment will be announced at a future date.

Brigadier Wansbrough attended the Annual Convention of the Ontario Dental Association in Toronto.

Major G. C. Evans and Major L. G. Craigie of the R.C.D.C. School presented papers on "Approved Methods of Rebasing Cast Partial Dentures" and "The Newer Concepts of Cavity Preparation" at the Ontario Convention.

Colonel K. M. Baird conducted the Annual Inspection of R.C.D.C. (M) units for the Annual Efficiency Competition. Units were inspected at Halifax, Montreal, Ottawa, London, Edmonton, Calgary and Vancouver. Colonel Baird was accompanied by Lt.-Col. J. G. Hamilton, Senior Procurement Officer at the Dental Directorate.

Captain D. E. Williams of Lancaster, N.B., one of two R.C.D.C. officers serving with Canadian Base Units Middle East, reports, "I've seen the dental problems of soldiers from four continents. I'd never find such variety in a practice in Canada."

Army Headquarters has announced the promotion of Major R. H. G. Cunningham to the rank of Lieutenant Colonel, and of Captain J. W. Jolly to the rank of Major.

Lt.-Col. Cunningham was born in Toronto, educated at Humberside Collegiate and the University of Toronto, graduating in 1940. He enrolled in the Regular Forces in 1941, proceeded overseas in August 1942, served in U.K., Italy and North West Europe, returning to Canada in December 1945. Lt.-Col. Cunningham was recently employed in the Directorate of Dental Services at Army Headquarters. He is now employed at Air Force Headquarters Dental Clinic, Ottawa.

Major Jolly was born in Islington, Ont., served in the R.C.I.C. 1945 to 1946, on demobilization attended U. of T., graduating in 1951. Major Jolly enrolled in R.C.D.C. as 2/Lt. in 1950 while an undergraduate. On graduation he was posted to No. 13 Company, Trenton, Ontario. Major Jolly was posted to No. 1 Field Dental Unit in Germany from 1953 to 1955. He is currently serving at No. 6 R.D., R.C.A.F., Trenton, Ontario.

Lt.-Col. A. T. Roger of the R.C.D.C. School staff is presenting a clinic on Oral Surgery to officers of the R.C.D.C. Regular and Militia at the following centres: Montreal, Halifax, Trenton, Winnipeg, Edmonton, Vancouver and Victoria.

Lt.-Col. Roger will also be lecturing on Maxillo-Facial Injuries on the Service Medical Course at the Medical Joint Training Centre in Toronto.

The following officers were retired May 1, 1957:

Lieutenant Colonel F. J. MacLean; Major J. C. Duff; Major W. O. Gardiner; Major L. M. Gray.

Lt.-Col. MacLean was born in New Glasgow, N.S., in January 1900. He attended Saskatoon High School and graduated from the Royal College of Dental Surgery, Toronto in 1923. He served overseas in the ranks of the Princess Patricia's Canadian Light Infantry during the Great War, 1914-18, and was commissioned in the Canadian (now Royal Canadian) Dental Corps in 1940. He was promoted to the rank of Lieutenant Colonel in 1945. Lt.-Col. MacLean's service in the Second World War was mainly with the Royal Canadian Navy. He served aboard the "Prince Robert" and with No. 65 Motor Torpedo Boat Flotilla. Following the war he has commanded dental units based in Halifax, Winnipeg and Edmonton. Lt.-Col. MacLean has been succeeded as Commanding Officer of No. 14 Company, Winnipeg, by Lt.-Col. C. E. Purdy, formerly of the Directorate of Dental Services, Ottawa. Lt.-Col. MacLean will continue to serve the Corps in a civilian capacity at London, Ontario.

Major Duff was born in Inverary, Ontario. He graduated from the University of Toronto in 1921. He was appointed to C.D.C. in 1941. Major Duff has been employed in Kingston, Ontario and will proceed on retirement from this location.

Major Gardiner was born at Almonte, Ontario. He graduated from the University of Toronto in 1924. Major Gardiner was appointed to the Corps in 1942. He has recently been employed at R.C.A.F. Station Uplands where he will continue to serve the Corps in a civilian capacity.

Major Gray was born in Campbellton, N.B. He graduated from the University of Toronto in 1924. Major Gray served with 3rd Canadian Divisional Signals in France from October 1915 to November 1918. He was appointed to the C.D.C. in July 1941 and served throughout the war in Canada. Since the war Major Gray has served from coast to coast in Canada, including a tour of duty at sea aboard H.M.C.S. Magnificent. Major Gray has recently been employed at H.M.C.S. Shearwater, Dartmouth, N.S.

THE PROVINCES

Ontario

Dr. Samuel Eckel Honoured

February 20th the Inter-County Dental Society honoured one of its oldest and highly esteemed members — Dr. Samuel Eckel.

Dr. Eckel was presented with a handsome gold clock and pen set in honour of his retirement — after fifty-one years in the practice of dentistry.

Dr. Eckel graduated from the Chicago College of Dental Surgery in 1904, and from the Royal College of Dental Surgery in Toronto, 1905. He has practised continually in the City of Waterloo.

Dr. Eckel was a member of the curling and bowling clubs, Young Men's Club, Chamber of Commerce and the Inter-County Dental Society.

Durham, Ontario Dental Society

Dr. William Brett of Cobourg was elected president of the Durham, Ontario Dental Society at its spring meeting at the Baltimore Hotel, Cobourg. Members attended from Whitby, Oshawa, Bowmanville, Port Hope and Cobourg.

HAMILTON DENTISTS RECORD 319 YEARS OF SERVICE

Back row l. to r. — Dr. W. D. Clark (1921), Dr. A. R. Poag (1919), Dr. C. T. Moyle (1920), Front Row l. to r. —Dr. J. N. Stewart (1908), Dr. F. L. Williamson (1903), Dr. F. P. Moore (1900) and Dr. H. M. Morrow (1909).

All are past-presidents of the Hamilton Dental Association and each is a Fellow of the American College of Dentists. Drs. Moore, Williamson, Stewart and Poag are past-presidents of The Ontario Dental Association. All have written articles and presented clinics to local, provincial, and national conventions. Hamilton should be proud of such a distinguished group.

Dentists from Brockville and surrounding communities gathered at the Golden Oak, Maitland, to attend the spring meeting of the Brockville Dental Society. Those attending were left to right, front row, Dr. F. Phillips, Secretary-Treasurer, Brockville; Dr. H. R. Campbell, Kingston; Dr. L. B. Nuttall, Prescott; Dr. I Calder, Brockville, Dr. M. Wilson, Perth. Middle row, left to right, Dr. J. C. Derbyshire, Smiths Falls; Dr. A. W. Sheridan, Brockville; Dr. C. W. Burnett, Smiths Falls; Dr. H. A. Stewart, Kingston; Dr. F. T. Pearson, Toronto; Dr. W. L. Durant, Brockville. Back row, left to right, Dr. G. Lightford, Perth; Dr. D. H. Mallory, Brockville; Dr. A. M. Clark, Kingston; Dr. F. M. Bliss, Brockville; Dr. J. E. Taylor, Dr. N. Sidorchuck of Cornwall; Dr. C. O. McDougall; Dr. R. E. Feasby, Kingston; Dr. R. M. Werry, Kingston.

Other officers are: Dr. John Phillips, Oshawa, vice-president, and Dr. Gordon Adair, Oshawa, secretary.

The afternoon business session was conducted by Dr. Peter Willson of Oshawa. Following his session, Dr. John M. Phillips gave a clinic on endodontics.

The guest speaker at the evening meeting was Dr. F. T. Pearson of Toronto, who spoke on some aspects of silicate restoration.

Kingston and District Dental Society

The Kingston and District Dental Society held its April meeting in Morrison's Lounge. The speaker was Dr. J. F. Methven of Toronto who lectures in pharmacology at the Faculty of Dentistry, University of Toronto. He spoke in the afternoon and in the evening on, "Pharmacology in Dentistry."

Dr. Harvey Campbell, the president of the society, presided for the meeting and welcomed visiting dentists from Watertown, N.Y., and Sharbot Lake.

The March meeting of the Society was a ladies' night at which Dr. and Mrs. Campbell were hosts at a dinner and dance that was enjoyed by the Kingston dentists and their wives and visitors from Picton and the Royal Canadian Dental Corps.

Alberta

Edmonton Dental Society

Dental Health Week was highlighted in the April meeting of the Edmonton Society. Dr. A. R. Urschel, chairman, introduced the guest speaker, Dr. James M. Mather, professor of public health, University of British Columbia. Dr. Mather urged dentists, physicians and others concerned with health problems to provide the facts on fluorida-

tion to the public. Parents, home and school associations, clubs and women's groups should head the campaign to bring about fluoridation of Edmonton's water supply. Dentists should refuse to become martyrs to the cause, said Dr. Mather. A well informed public could be trusted to vote in the benefits of fluoridation for their children, he said. Guests at the banquet included representatives from twenty different organizations so that Dr. Mather's message reached a combined professional and lay group.

Other activities of Dental Health Week included an interview on TV with Dr. A. R. Urschel, chairman, Edmonton District, and short radio talks by members of the Faculty of Dentistry, University of Alberta.

G. C.

British Columbia

Vancouver and District Dental Society

A dentist from Oslo, Norway, held the spotlight at the April meeting. Dr. Birger Nygaard Ostby, on his third tour of North America, gave lectures across the U.S. on cavity preparation and the action of filling materials on the pulp.

Dr. J. E. Harrison presented the essayist, who has had a distinguished career in his native land as teacher, editor and specialist in endodontics.

Dr. Ostby's Scandinavian accent was almost an asset, as it compelled undivided attention. From his research work (financed by the national football lottery), he found that even incipient caries caused irritation to the delicate pulp tissue. In appraising the various filling materials for their action on the pulp, acrylic resins and the resin cements were flayed for their deleterious effects. It was found that a very thin film of zinc oxyphosphate cement produced no pulpal change.

Dr. Wm. Scott complimented the speaker on the "bread and butter" value of his afternoon and evening presentations.

A revamped constitution was adopted by the society, which became incorporated on March 1. No actual changes were made, but the clauses were re-arranged to comply with the Societies Act.

College of Dental Surgeons

Elections for members of the Council of the College took place in April when the following were chosen to represent the five electoral districts of the province:

Dr. M. J. T. Dohan and Dr. Charles Usher, Victoria; Dr. L. B. Alexander, Haney; Dr. G. I. Creasy, Dr. C. R. Hallman, Dr. W. P. Munsie and Dr. C. M. Whitworth, Vancouver; Dr. H. J. Hocking, Prince George; Dr. Wm. Gregorak, Rossland.

The new Council will assume office in July for a period of two years.

Fraser Valley Dental Society

There was a good attendance at the monthly meeting held in Mission on April 11 when Dr. Wm. McPhail presided in the absence of the President, Dr. A. D. MacPherson. After the business was transacted, Dr. G. L. Plant of Vancouver presented a series of slides on periodontics. He stressed that many periodontal cases could be treated effectively by utilizing simple techniques.

D. H M.

GENERAL NEWS

Dentistry and Blue Shield

The petition of the United Medical Service, Inc., one of the seven Blue Shield companies operating in this State, to the Supreme Court of the State of New York, to review the determination of the Superintendent of Insurance of the State of New York that required reimbursement for treatment in the field of oral surgery, irrespective of whether the specific patient was attended by a physician or a dentist, was recently dismissed. As pointed out in the opinion of Hon. Henry Clay Greenberg, Justice, the determination of the Insurance Department, which has powers over the Blue Shield companies, was based in large part upon the opinion of the attorney general that "where a medical expense indemnity contract covers service of a kind recognized as common to both the medical profession and the dental profession a subscriber is entitled to reimbursement for such service whether performed by a physician or a dentist." The court further found that the Superintendent of Insurance complied with his statutory authority and that his

determination reflected a realistic interpretation and fostered a salutary practice.

The Dental Society of the State of New York appeared in the proceeding as amicus curiae and supported the contentions of the attorney general, all of which were upheld by the court.

Fluoridation in Operation in 1,492 U.S. communities

Fluoridation of public water supplies was in operation in 1,492 communities with a combined population of 31,485,409 as of March 1, according to the U.S. Public Health Service.

IN MEMORIAM

Albert E. Slack — Dr. Albert E. Slack died in April at Medicine Hat. Dr. Slack was a pioneer dentist of the community and founder of the dental clinic. This was established in 1936 in conjunction with Dr. J. Lyle Wyatt and Dr. T. Slack.

Dr. Slack was 72 years old. He is survived by his wife, Hazel, and one daughter, Marian, and three sons, Dr. Ted Slack, Howard and Fred, all of Medicine Hat.

Leon Choquette — Dr. Leon Choquette, well known Montreal dentist, died on April 22nd after a long illness. He was 65 years of age.

Dr. Choquette graduated from Ste. Marie College and University of Montreal Faculty of Dentistry in 1916, and had practised in Montreal for 40 years.

Dr. Choquette was predeceased by his wife in 1952 and is survived by a son, Leon, and four daughters, Mme E. Dubord, Mme M. Mathieu, Mme G. Larochelle, and Fernande.

Thomas Brown Armstrong — Dr. Thomas Brown Armstrong died recently after a sudden illness. He was 83.

Born in Markham, Dr. Armstrong was a graduate of the Royal College of Dental Surgeons of Ontario. His entire practice was in Indian Head, Saskatchewan, until his retirement 31 years ago. He returned to Toronto 26 years ago and centred his business interests in mining and until a very few years ago had been on the executive of many Ontario mining companies.

Dr. Armstrong took a great interest in the John Howard Society, the Scott Mission and other philanthropic endeavours. He was a life member of the Masonic Lodge at Indian Head and attended St. Anne's Anglican Church.

Surviving are his widow, the former Alma Campbell, and one brother, R. P. Armstrong of Markham.

Florent Bacon — Dr. Florent Bacon of Amos, died in March at the age of 45. He had practised in Amos since his graduation.

Dr. Bacon is survived by his wife, the former Marthe Brunet, and two young children.

Arthur Willard Coon — Dr. Arthur Willard Coon died at his residence in Norfolk, Virginia, April 26, 1957.

Dr. Coon graduated from the University of Toronto in 1923 and practised from that time to 1926 in Lindsay, Ontario, and then moved to Norfolk, Virginia, where he practised until his death.

Surviving Dr. Coon are his wife, Lulu, and a daughter, Mrs. A. Beatty of Cayahoga Falls, Ohio; six sisters, Mrs. R. Vickery, of Lindsay; Mrs. W. L. Anderson, Brighton; Mrs. M. Dobbin, Pickering; Mrs. W. H. Frise and Mrs. C. H. Elliott of Peterborough; and a brother, Horace, of Peterborough.

Dr. Coon was interred at Lindsay, Ontario.

Richard N. C. Brown — Dr. Richard N. C. Brown died suddenly in March while visiting his brother in British Columbia. He was born in Kentone, Manitoba, and lived in Weyburn for a number of years. He taught schools in various places in Saskatchewan and served in World Wars I and II. Dr. Brown graduated from the Royal College of Dental Surgeons of Ontario in 1923 and practised in Assiniboia, Saskatchewan, until his death.

Dr. Brown served his community well and was a member of the town council for a number of years. He was interested in sports of all kinds, especially golf, curling and baseball. He was also interested in music, and was a Church trustee and a member of the masonic lodge.

He is survived by his wife, three brothers and three sisters.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1957	Winnipeg, Manitoba.	June 23rd—26th
1958	Montreal, Quebec.	October 5th—8th
1959	Halifax, Nova Scotia.	June 21st—24th
1960	Ottawa, Ontario.	September
1961	Saskatoon, Saskatchewan.	June 25th—28th
1962	Toronto, Ontario.	May
1967	Toronto, Ontario. *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	*Function*	*Location*	*Officer*	*Address*
June 23, 1957	Canadian Society of Oral Surgeons	Royal Alexandra, Winnipeg, Man.	Dr. J. Passalis	313 MedicalArts Bldg., Winnipeg, Manitoba.
Aug. 3-4, 1957	Fifth Annual Roentgenology Workshop	Vancouver, B.C.	Dr. O. F. Wright	Secretary-Treas., 4014 Cambie St., Vancouver, B.C.
Aug. 19-22, 1957	Pacific Coast Dental Conference	San Diego, California	Dr. C. W. Gilman, Secretary	219 E. 8th Street, National City, Calif.
Aug. 28-Sept. 2nd, 1957	European Orthodontic Society Meeting	Geneva, Switzerland	Prof. E. Fernex	1 Place du Port, Genève, Suisse.
Sept. 7-14, 1957	Congrès de la Fédération Dentaire Internationale	Rome, Italy		Canadian Dental Assoc., 234 St. George St., Toronto
Octo. 13-17, 1957	American Institute of Dental Medicine Annual Meeting	The Oasis Hotel, Palm Springs, California	Miss M. G. Lewis	Executive Secretary, 2240 Channing Way, Berkeley 4, Calif.
Oct. 31, Nov. 1st & 2nd 1957	American Academy of Periodontology Annual Meeting	Hotel Di Lido, Miami Beach, Fla.	Dr. H. A. Hartman	Chairman Pub. Comm., 4187 Pearl Road, Cleveland 9, Ohio.
Nov. 1-2, 1957	American Academy Gold Foil Operators	Miami, Fla.	Capt. R. B. Wolcott	Navy Dent. Tech. School, Naval Training Center, San Diego, Calif.

SHORT GRADUATE COURSE

TUFTS UNIVERSITY—Course in Periodontology—October 7-October 11, 1957—Tuition—$150.00.

Apply: Director of Graduate & Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Mass.

Volume 23
Numéro 6
Juin 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Le rôle de la chirurgie dentaire dans un service de santé

par HENRI SILBERT, B.A., L.S.D. (Bruxelles), D.D.S., Montréal

Le professor William J. Gies, de l'Université de Columbia, New York, était choisi en 1921 par la Fondation Carnegie pour faire une surveillance de l'éducation dentaire aux Etats-Unis et au Canada. En 1926, il a publié un rapport sous forme d'un bulletin appelé "Bulletin no 19".

Dans son rapport, le Dr. Gies définit ainsi le rôle de la profession dentaire. "La dentisterie constitue une branche importante du Service de Santé concernant directement les dents et les tissus adjacents de la cavité buccale et indirectement les autres parties de l'organisme. La dentisterie par la qualité et l'efficacité des services qu'elle rend au patient doit être élevée au rang d'une spécialité buccale de la pratique de la médecine."

La profession dentaire accepte avec enthousiasme cette recommandation du Dr. W. J. Gies en portant une grande attention aux sciences médicales et biologiques. La responsabilité du dentiste dans le maintien de la santé générale par la santé de la bouche est définie clairement.

Plusieurs dentistes participent aux activités liées avec le problème de la santé de la population. En 1937, J. A. Salzmann publie son livre intitulé "La Santé Publique", le premier livre traitant de l'aspect dentaire de la santé publique, écrit par un dentiste.

La médecine moderne se divise en trois principales activités:

1. Médecine curative
2. Médecine préventive
3. Santé publique

1. *La médecine curative* s'occupe de rétablissement de la santé de l'individu pour lui permettre d'assumer ses activités de la vie quotidienne.

2. *La médecine préventive* s'occupe de la responsabilité directe de l'individu dans la prévention de la maladie et la promotion de sa santé et de celle de sa famille.

3. *La santé publique* embrasse les activités en rapport avec la prévention des maladies et la promotion de la santé, qui constituent une responsabilité de la communauté.

En substituant le terme médecine par

dentisterie, on peut décrire la pratique dentaire comme un vrai service de santé.

Winslow définit la santé publique comme la science et l'art de prévenir la maladie, de prolonger la vie, de promouvoir la santé physique et l'efficacité par un effort organisé de la communauté.

L'Association dentaire americaine donne la définition suivante de la santé publique: "La santé publique est un art qui consiste à maintenir, à protéger et améliorer la santé de la population par un effort organisé de la communauté."

Strusser définit ainsi la dentisterie du service de santé publique: "C'est un effort scientifique, opératif et éducatif qui a pour but la prévention et le contrôle de la "maladie dentaire" au sein de la communauté"[4]

Dans un discours adressé aux dentistes américains, le Dr Lloyd E. Blauch, directeur du Départment de Santé et d'-Education du Ministère de Santé des Etats-Unis, définit ainsi les devoirs et les responsabilités du professionnel contemporain: "Le professionnel, c'est un citoyen exemplaire; car l'homme qui exerce une profession libérale a une responsabilité envers ses concitoyens, sa société et sa nation. Par son éducation et sa position sociale, il est prédestiné à jouer un rôle de meneur dans la Société. Le dentiste moderne par sa position sociale et son prestige doit participer à l'oeuvre de la propagation et d'extension des soins dentaires sur le plus grand nombre de citoyens et ainsi favoriser la solution du problème de la santé buccale."

La santé publique est la santé de la nation

Par la santé publique vers la santé de la nation. Cette définition simple et compréhensive de la santé publique ne se limite pas à un groupe de la population. mais à la nation entière. Il n'y a pas de désaccord entre le praticien privé et l'officier de la santé publique, car tous les deux sont unis par le même objectif à atteindre, la similarité des méthodes de traitement, ont la même formation universitaire et la même philosophie des traitement des maladies dentaires.

La nécessité d'un programme dans le service de la santé dentaire

Si tout le monde pouvait consulter son dentiste de famille, on se demande pourquoi nous avons besoin d'élaborer un programme de santé dentaire?

A cette question, on peut donner les réponses suivants:

1. Les soins dentaires ne peuvent pas être donnés à tous ceux qui en ont besoin.

2. Beaucoup de gens qui ont besoin de soins dentaires se désintéressent complètement, même si ces soins sont accessibles. Il faudrait donc quelqu'un qui pourrait expliquer l'importance des soins dentaires à la population.

3. Les soins dentaires pour les enfants, essentiels pour la bonne santé de la bouche, sont insuffisants, car un grand nombre d'enfants ne reçoivent pas les soins adéquats.

4. Plusieurs régions n'ont pas profité de l'avantage de la réduction de la carie dentaire chez les enfants; celle-ci pourrait s'obtenir par la fluoruration des eaux potables.

Les principes de base d'un programme dentaire de service de santé

1. L'objectif principal d'un programme du service de santé consiste à corriger les déficiences existantes dans la santé dentaire de la population par la création des services de santé privés ou publiques. (Exemple: service dentaire dans un hôpital).

2. La possibilité d'étendre les soins dentaires à toute la population.

3. Un programme effectif d'éducation de santé dentaire spécialement destiné aux enfants de l'âge scolaire et préscolaire effectué par des spécialistes de santé publique (dentistes et hygiénistes).

4. Créer un programme effectif de paiement (assurances, subsides privés et gouvernementaux) pour les soins dentaires.

5. Favoriser le programme de prévention des maladies dentaires.

6. Favoriser l'adoption du programme de fluoruration des eaux potables.

7. Favoriser la recherche scientifique pour résoudre les problèmes de la maladie dentaire.

Service dentaire dans un hôpital

Le fonctionnement d'un service dentaire dans un hôpital

La dentisterie moderne exige une collaboration étroite entre la médecine et la dentisterie. L'hôpital moderne ne peut pas fonctionner efficacement sans un service dentaire moderne. Le service dentaire d'un hôpital ne doit pas limiter ses soins seulement aux patients hospitalisés, mais aussi admettre les patients externes.

Pour donner aux départements dentaires des hôpitaux aux Etats-Unis une valeur appropriée, un comité des Services dentaires des Hopitaux confère un certificat de compétence. Ce certificat (standards) a été adopté par la Chambre des Délégués de A.D.A. Ce certificat est connu sous le nom de "Basic Standards of Hospital Dental Service required of approved hospital." Il établit les minima requis pour l'organisation d'un service dentaire dans un hôpital. Les exigences de base recommandées par le comité du service dentaire d'un hôpital approuvé prévoit six sections:

1. Dentisterie pour les enfants
2. Dentisterie opératoire (restauration)
3. Périodontie
4. Radiographie
5. Chirurgie buccale
6. Pathologie buccale[1]

La relation du service dentaire d'un hôpital avec les autres départements

Le facteur important qui a contribué au développement de la chirurgie buccale constitue la reconnaîssance de l'esprit biologique des problèmes dentaires. Au début de ce siècle, cet aspect biologique concernant la cavité buccale n'existait pas. Le dentiste limitait sa consultation à la restauration des parties absentes des dents et au remplacement des dents manquantes. Les médecins considéraient la cavité buccale comme une brèche béante: ouverture qui leur permettait d'examiner les amygdales et rarement la surface dorsale de la langue. La théorie de Rosenow au sujet des infections focales a réveillé l'intérêt pour l'aspect biologique de la cavité buccale. Les médecins et les dentistes ont compris que le diagnostic et le traitment des maladies de la bouche exigent des notions de la médécine et de l'art dentaire.

Les patients qui doivent se soumettre à des interventions chirurgicales buccales et qui souffrent d'une condition systémique demandent une attention spéciale. Donc la chirurgie buccale nous offre un terrain de collaboration entre le médecin et le dentiste.

Les dentistes du service dentaire sont en contact avec médecins dans le cas de complications pré-opératoires et post-opératoires. De l'autre côté, le dentiste du service dentaire d'un hôpital aide le médecin dans l'élaboration d'un diagnostic d'une maladie systémique, par un diagnostic différentiel des manifestations buccales des désordres systémiques.

Comme exemple, on peut citer troubles endocriniens, déficiences nutritives, dyscrasies sanguines et lésions cancéreuses Les médecins réfèrent leurs patients chez le dentiste avec recommandation d'éliminer des foyers d'infection d'origine dentaire et péridentaire (abcès, kyste, infection résiduelle, etc). Souvent le médecin traitant réfère son patient chez le dentiste en suggérant l'amélioration du pouvoir de mastication afin d'éliminer une manifestation gastrique.

La correction des déformités maxillo-faciales acquises ou congénitales (fissures velo-palatines-becs-de-lièvres) demande une collaboration et du travail d'équipe médico-dentaire.

De traitement des fractures des os des maxillaires avec lacération des tissus mous de la face et des infections sévères des maxillaires (ostéomyélite) demande aussi une collaboration médico-dentaire.

Très souvent, l'intervention sur le sinus du maxillaire ou une névralgie faciale nous oblige à chercher un conseil de la part de l'otho-rhino-laryngologiste. Un exemple frappant de la collaboration du dentiste-chirurgien avec le médecin spécialiste est la transplantation par greffe cutanée, osseuse ou cartilagineuse.[2]

Conclusion

Les soins dentaires présentent une partie nécessaire de traitement médical et chirurgical des patients hospitalisés. De ce fait, découle la nécessité de coopération entre la médecine et la dentisterie dans un hôpital moderne. La majorité des hopitaux aux Etats-Unis et au Canada possèdent un service dentaire équippé d'une façon moderne afin de pouvoir remplir les exigences établies par l'A.D.A.

Le rôle et la responsabilité du dentiste dans un service de santé publique

Pendant les derniers cinquante ans, la profession dentaire a accompli des progrès énormes et subit une maturation qui lui a permis d'occuper une part intégrale dans le domaine du service de santé publique.

Le progrès accompli dans le domaine de la recherche, de l'éducation dentaire du public, de la prévention et dans l'organisation de la profession a permis de considérer la dentisterie comme une nécessité vitale, afin de préserver la santé de la population. Nous avons vaincu beaucoup de maladies graves, telles que le choléra, la fièvre thyphoide, la malaria, la diphtérie etc. Nous vivons dans une ère de la prévention et de contrôle. Les gouvernements et les institutions privés établissent toutes sortes de systèmes de prévention pour sauvegarder le plus grand trésor de la nation: *la santé.* La médecine emploie toutes les mesures préventives possibles pour prévenir la maladie et assurer une meilleure santé à l'individu et à la communauté. La tuberculose est aux portes de la défaite et le jour nous pourrons vaincre la maladie dentaire n'est pas tellement loin.

Surveillance dentaire

La première étape d'examen. La surveillance conduite par le dentiste dans un service de santé est identique à l'examen conduit par le médecin et le praticien privé.

La deuxième étape consiste à créer une fiche d'observation, genre surveillance dentaire. Cette surveillance s'avère nécessaire afin d'établir un diagnostic précis qui permettra ensuite d'instaurer le traitement adéquat. Etant donné que le service dentaire de la santé publique a un spectre objectif plus large que l'individu, c.-à-d. la societé ou la communauté, il est nécessaire de faire une étude statistique des problèmes spécifiques liés avec la maladie dentaire. A base de ces chiffres, nous pouvons tirer certaines conclusions sur les déviations de la normale et ensuite les éliminer.

La planification du programme de traitement

Après avoir établi le diagnostic, il faut préparer un plan de traitement effectif. Ce "planning" doit prévoir le coût de traitement dentaire qui joue un rôle important dans le choix des matériaux à employer pour les procédures restauratrices. L'officier d'un service dentaire peut être limité dans sa planification par l'action des organismes administratifs qui peuvent accepter ou rejeter son plan ou encore admettre une partie du plan proposé.

Les buts spécifiques de la surveillance dentaire

L'étude compréhensive de la maladie dentaire peut être entreprise pour trois raisons majeures:

1. Etude épidémiologique
2. Planification et élaboration du programme
3. Evaluation du programme

1. *Etude épidémiologique* (surveillance). Elle est nécessaire afin de recueillir les renseignements pouvant aboutir à la découverte des facteurs qui influencent directement l'occurence et le développement de la maladie dentaire. Cette surveillance épidémiologique dentaire aide à déterminer le caractère de la maladie dentaire et les conditions dans lesquelles cette maladie se manifeste parmi les groupes de la population. Les facteurs qui sont associés avec la maladie dentaire

sont: occupation, âge, sexe, race, climat, habitudes diététiques, sources d'eaux potables, taux de fluor endémique dans les eaux de boisson et environnement social et économique. Une excellente illustration de l'emploi de la surveillance dentaire épidémiologiques est présenté dans le rapport de Dean et de ses associés sur la relation entre le fluor, l'émail madré et prédominence de la carie dentaire.

2. *La planification du programme* prépare les renseignements d'ordre économique, social et hygiénique de la communauté. Les ressources financières de la communauté sont étudiées à fond pour pouvoir synchroniser les besoins dentaires avec les possibilités financières. Le nombre de cliniques disponibles et le nombre de dentistes disponibles à collaborer avec le service dentaire doit être enregistré et envisagé par la planification. Les services préventifs et curatifs qui résultent de la fréquence de la maladie dentaire parmi la population.

3. *L'évaluation du programme de l'inspection dentaire* consiste à ammaser les renseignements objectifs pour évaluer l'efficacité du programme dentaire existant, l'expansion éventuelle du programme existant et de son financement.

La discussion de la surveillance (inspection) dentaire de la maladie spécifique: la carie dentaire

La carie dentaire est une maladie des dents spécifique, caractérisée par la décalcification progressive de l'émail et de la dentine et qui n'est pas soumise à la loi de l'auto-réparation par le mécanisme de la guérison.

L'extraction s'impose comme résultat final, si un traitement conservateur n'interrompt pas la marche de la carie. La procédure la plus courante qui nous aide à contrôler la carie dentaire est l'extirpation chirurgicale de la partie cariée de la dent et son remplacement par le matériel obturateur.

Les ravages causés par la carie dentaire sont constatés surtout chez les enfants. On possède les données statistiques concernant surtout les enfants et aussi les adults de différentes régions qui démontrent une situation catastrophique à ce point de vue. Parmi tous les désordres classés dans la maladie dentaire, la carie occupe une position prédominante.

La carie dentaire commence à se développer aussitôt après l'éruption des dents temporaires. Le temps de l'exposition des dents à l'attaque de la carie est en rapport direct avec l'éruption des dents.

La première molaire permanente qui fait son éruption vers l'âge de six ans est exposée à l'attaque de la carie six ans de plus que la deuxième molaire permanente qui fait son apparition vers l'âge de douze ans. Les différents types morphologiques des dents de la dentition temporaire et permanente possèdent différents degrés de susceptibilité à la carie. Les molaires sont attaquées plus fréquemment que les incisives. La surveillance épidémiologique de la population nous révèle une augmentation du nombre de dents cariées avec l'âge au niveau de la dentition permanente. L'inclusion des dents permanentes extraites, dans l'estimation totale de l'expérience de la carie, est permise jusqu'à l'âge de 30 à 35 ans, car seule la carie dentaire est responsable de la perte des dents jusqu'à cet âge.

L'étude conduits par la clinique Guggenheim nous donne un chiffre de *58% des enfants de l'âge préscolaire à l'examen dentaire révélant la carie dentaire: 17% des enfants examinés présentant 7 cavités et plus. A l'âge de 5 ans, 50% possèdent plus que 7 cavités. Avant que l'enfant puisse atteindre l'âge scolaire, il possède déjà trois dents cariées.* Il est possible d'estimer que 20% des enfants vers l'âge de 6 ans ont souffert de carie dentaire au niveau des dents permanents et que 80% ont souffert de la carie des dents temporaires.

Vers l'âge de 12 à 13 ans, un enfant, en moyenne, possède 5 dents permanentes cariées. Le nombre de dents affectées par la carie continue à monter avec l'âge, atteignant une moyenne de 7 vers l'âge de

16 ans et de 9 à 16 dents, vers l'âge de 20 ans.

Ce chiffre alarmant nous indique que la carie continue ses ravages aussi longtemps que les dents restent dans la cavité buccale. La négligence accélère ce rythme de la destruction et la perte prématurée des dents.

L'indice des caries est élevé aux Etats-Unis et au Canada et il continue de monter constamment. Perrot démontre dans ses statistiques que le besoin des soins dentaires parmi les adolescents est plus urgent maintenant qu'il y a 20 ans. Klein et Palmer trouvent que 1.3 des surfaces des dents permanentes parmi les enfants entre 6 et 15 ans sont attaquées par la carie, chaque année, et que plus que 4/5 de ces surfaces cariées n'ont reçu aucun soin. Les statistiques récentes nous démontrent que seulement 25 à 35% de la population visite le dentiste d'une façon plus ou moins régulière.[7]

La conception de la dentisterie préventive

Définition: Toutes les activités et méthodes de traitement qui peuvent avoir une action préventive et qui peuvent empêcher les récidives de la maladie de la bouche. Il est impossible de pratiquer la dentisterie préventive sans avoir les données statistiques concernant le développement des caries dentaires parmi la population.

La carie dentaire infantile

Il éxiste différents moyens d'expression statistiques des caries dentaires chez les enfants:

1. le compte de nombre total de dents atteintes
2. le compte de dents cariées
3. le compte des dents absentes
4. le compte des dents obturées
5. le compte des surfaces affectées
6. le compte des dents absentes permanentes, par personne
7. la détermination du pourcentage des enfants avec au moins une dent permanente obturée, manquante ou cariée

Une technique plus raffinée de surveillance statistique du progrès de la carie dentaire consiste à faire une estimation des dents *absentes, obturées* et *cariées* dans un service de santé. D-M-F (decayed, missing, filled).

La lettre "D" représente le nombre de dents permanentes qui requièrent soit une extraction, soit une restauration.

La lettre "M" représente le nombre de dents absentes, sans envisager la cause de l'absence.

La letter "F" représente le nombre de dents obturées. Le facteur D.M.F. est exprimé pour 1000 enfants. La somme de dents permanentes manquantes, cariées et obturées pour un âge donné et divisée par le nombre de sujets de cet âge donné nous indiquera le chiffre moyen des dents atteintes par personne, pour cet âge. Il est généralement admis qu'après 6 ans et jusqu'à 20 ans le D.M.F. moyen, par personne, augmente de 1.0 à 1.4 D.M.F. de dents par personne, par an.

Plusiers facteurs peuvent influencer l'index D.M.F. Comme exemple, on peut mentionner l'expansion des soins dentaires pour les enfants, la concentration du fluor dans les eaux potables, la diète alimentaire, les antécédents héréditaires et raciaux, le sexe etc.

Les différents auteurs comme Boyd, Klein et Palmer se sont servis de l'index D.M.F. T.S. (decayed-missing-filled tooth surfaces). La surveillance-statistique nous démontre une différence dans la vitesse de l'attaque de la carie pour les différentes dents. Evidement, la *dent de six ans* est la dent la plus gravement touchée. Environ 64% de toutes les surfaces affectées au niveau du maxillaire supérieur concernent la première molaire et 87% des surfaces attaquées au niveau du maxillaire inférieur concernent la première molaire inférieure. Cette situation est due à l'éruption de la dent de six ans plus tôt que les autres dents permanentes.

Voici un exemple d'une fiche d'observation:

DENTAL SURVEY (*fiche d'observation*)

Comté...Nicolet School District...No. 39 Examen...Dr. Jordon

Ville..... Adresse..... Date.....

NOM	AGE	SEXE	DENTS PERMANENTES (exceptées pour les obturations)						
			D.M.F.	Obturations		Dents absentes		Total	REMARQUES
				P	D	extraction indiquée	extraites		
Jones, Mary	9	F	+	+	+	0	0	0	
Smith, Joan	9	F	0	0	0	0	0	0	
White, Peter	9	M	+	0	0	6/	6/	2	
Black, John	9	M	+	+	0	0	0	0	2/ congenitally missing (absente)

Cette fiche met en évidence une ou plusieurs D.M.F. au niveau des dents permanentes, dents obturées et dents permanentes extraites ou à extraire.

L'incidence de la carie au niveau des dents temporaires

L'analyse des résultats obtenus sur l'expérience de la carie au niveau des dents temporaires est limitée seulement aux caries qui n'ont pas eu besoin d'extraction avant l'examen. Etant donné le temps variable d'exfoliation des dents temporaires, il est difficile de déterminer si la dent absente temporaire a subit une exfoliation normale ou forcée par extraction à cause de la carie avancée. L'index D.M.F. se transforme pour les dents temporaires en l'index D.F. seulement. L'incidence de la carie au niveau des dents temporaires augmente directement avec l'âge, jusqu'à l'âge de 10 ans, et ensuite diminue avec l'âge. Cette diminution est due à l'effet d'exfoliation des dents temporaires cariées[9].

La prévention et le contrôle de la carie dentaire

La nécessité des interventions prophylactiques comme aide dans la prévention des ravages causés par la maladie dentaire est évidente pour la profession dentaire et pour la société moderne. Selon Dollar, ancien secrétaire du Comité Economique de la Société dentaire américaine, chaque programme dentaire raisonnable doit être basé sur les soins préventifs, donnés à des intervalles réguliers afin de dépister la maladie dans son *stade initial.* Chaque dentiste expérimenté sait que chez les adolescents et les adultes il existe de nombreuses défectuosités dentaires qui n'ont pas été corrigées. Afin de pouvoir tenir la carie dentaire sous contrôle, il faudrait installer un arsenal de mesures préventives et cette immense tâche doit être confiée aux dentistes du service de santé. La prophylaxie de la carie dentaire connaît un regain d'actualité grâce à une campagne intense aux Etats-Unis et au Canada en faveur de sa réalisation par la *fluoruration de l'eau* et par *l'éducation de la population* de se soumettre aux examens périodiques de la bouche, à partir de l'âge de 3 ans.

Massler préconise trois moyenne de prévention:

1. Utilisation de ions du fluor, qui fait naître de grands espoirs.
2. Restriction hydrocarbonée dans le régime alimentaire.
3. Hygiène regulière de la bouche après les repas.

En 1944, le Collège de Dentistes américains a émis une opinion au sujet de la prévention et du contrôle de la carie: "Dans l'ignorance où nous demeurons dans la nature vraie de la carie, le seul moyen pratique que nous possédions dans notre arsenal pour enrayer ses progrès et restreindre des dommages demeure le dépistage de la lésion â ses *stades initiaux et le traitement précoce.*" Ces directives sont celles qui président à la lutte contre tous les *fléaux sociaux.*[8]

L'utilisation du fluor

L'agent préventif qui s'avère le plus efficace et le plus pratique à appliquer, c'est le fluor. La description d'Eager de l'émail madré (mottled enamel), a dirigé l'intérêt des recherches scientifiques vers la découverte de l'agent causal étiologique. McKay est le premier qui a constaté l'effet de la fluorose endémique dans les eaux potables sur l'émail dentaire et en même temps la réduction de la carie chez les individus dont les dents étaient atteintes d'émail madré.

L'identification des traces de fluor dans les eaux potables associées avec l'émail madré était accompli simultanément en 1931 par Churchill, Smith et Laritz.

L'index D.M.F. qui exprime l'expérience de la carie dentaire dans les termes quantitatifs a été établi aux Etat-Unis en 1933. Grâce à cette mesure, l'étude de la relation entre le fluor et la carie dentaire est devenue une réalité.

Dean, en faisant une analyse sur les enfants vivant dans les régions dont l'eau potable contenait le fluor dans les proportions variant de 0 à 2.6 parties par million, a constaté:

1. qu'il existe un rapport entre l'extension de la carie chez les enfants et la quantité de fluor des eaux potables; notamment, les dents des enfants buvant l'eau contenant le fluor étaient moins cariées.
2. que l'effet de l'action inhibitrice de la carie exercée par le fluor dans les proportions minimes ne provoque pas le phénomène de l'émail madré. Les proportions optima sont 1:1,000,000 parties.
3. que l'action inhibitrice de la carie se prolonge jusqu'à l'âge adulte chez les enfants qui continuent à boire l'eau fluorurée.

La décade d'observation dans les Grands Rapides, Michigan et Brantford, en Ontario, a permis de croire que les enfants buvant les aux potables additionnées de fluor bénéficient de la même action inhibitrice de la carie que les enfants des régions riches en fluor dans un état naturel dans les eaux potables.

Le communiqué fait par l'A.D.A., en 1954, recommande la *fluoruration des eaux de boisson controlée,* comme mesure préventive par excellence de la réduction de l'incidence de la carie dentaire. Actuellement, 1,000 municipalités aux Etats-Unis, avec une population de 18,000,000, bénéficient d'un programme de fluoruration des eaux potables. Ce programme a été approuvé par plusieurs associations médicales et para-médicales américaines.

Malgré le gain de popularité du programme de fluoruration à travers le continent américain, il existe certaines *forces obscures* qui s'opposent à l'adoption de ce programme vraiment progressif et *non nuisible* à la santé, de la même façon que certaines gens autrefois s'opposaient à la pasteurisation du lait ou la chloruration des eaux.

L'action inhibitrice de la carie par l'addition du fluor dans les eaux potables a été calculée par Arnold selon la teneur 1.0 p.p.m. (partie pour million) du fluor réduisant le taux de la carie dentaire de 60% et diminuant de ¾ la perte du nombre de dents permanentes. Environ six Américains sur 10 emploient les eaux potables communales. Si chacun d'eux recevait 1 p.p.m. de fluor dans les eaux potables pendant toute sa vie le problème de la réduction de l'incidence de la carie serait grandement soulagé.

Application pratique de la fluoruration des eaux potables

En 1954, le projet de la fluoruration des eaux potables était appliqué dans plusieurs grandes villes américaines, comme Baltimore, Philadelphia, San Francisco, etc. Le coût d'équippement et d'installation est modeste et ne dépasse pas $1,000 par petite ville et $3,000 par grande ville. Le coût de la fluoruration par année par capita de la population basé sur l'emploi de fluorure de sodium comme agent chimique a été à .14 sous.[9]

Application topique du fluor

Environ 2/5 des citoyens américains se servent des sources individuelles des eaux potables pour lesquelles le problème de la fluoruration est impraticable. La méthode la plus simple de faire béné-

ficier les enfants de ces régions de l'action inhibitrice de la carie exercée par fluor est l'application topique de solution de fluor sur les dents.

Cheyne a rapporté, en 1942, la réduction de la carie d'environ de 50% chez les enfants traités par l'application topique du fluor en solution.

Bibby préconise l'emploi d'une solution de fluorure de sodium de 1%.

Knutson et Armstrong préconisent une solution de fluorure de sodium de 2% appliquée pendant sept semaines. Comme résultat de leur procédé, ils mentionnent la réduction de la carie allant jusqu'à 36.7%.

Les études récentes indiquent que l'effet maximum est obtenu par l'application d'une solution de fluorure de sodium de 2% sur les dents des enfants pendant quatre semaines seulement, à des intervalles d'une semaine. On préconise le meilleur temps d'application topique aux âges suivants: 3, 7, 10 et 13 ans, c'est-à-dire après l'éruption des dents.

La technique d'application du fluor par voie topique est bien standardisée actuellement aux Etats-Unis et au Canada. Des milliers d'enfants ont bénéficié de cette technique à partir de 1948 grâce à la campagne de propagande et de l'action éducatrice conduite sous le patronage des officiers du Service d'Hygiène et de la Santé dentaire.

Nutrition et diète

Noyes, en 1938, a attribué à la nutrition un rôle important dans le développement de la carie dentaire.

Les travaux de Klatsky, Seigel, Waugh et de Karslan nous indiquent que les peuples primitifs souffrent beaucoup moins de la carie dentaire que les peuples civilisés. Ce fait n'est pas attribuable à une bonne nutrition. Malgré le pourcentage élevé de la carie sur le continent américain, la nutrition est très bonne. Le Conseil des Aliments et de Nutrition de A.M.A. a publié un rapport dans lequel il estime que l'index de calcium, per capita, contenu dans les aliments a augmenté de 40% depuis 1909 et, en même temps, la consommation des protéines, du fer, de la vitamine A., du thiamine, de la riboflavine, de la niacine et d'acide ascorbique en 1948 était équivalente ou excédante de la recommandation du Conseil National de Recherches.

Le progrès de la carie peut être arrêté considérablement par la *correction* de la *diète* et par *l'assortiment rationnel des aliments et boissons ingérés. La réduction* de la *carie est nette quand la quantité des carbohydrates subit une règlementation dans la diète, surtout chez les enfants.*

L'immunité naturelle contre la carie dentaire chez les anciens peuples et populations primitives est bien connue. L'exemple de la dentition des Esquimaux est frappant. Seulement 5% des Esquimaux de la Greenlandie développent la carie dentaire. La majorité des savants sont d'accord sur le point de considérer la carie comme une maladie des peuples civilisés. Le taux bas de caries chez les Esquimaux est attribuable à leur diète pauvre en hydrate de carbone, car le menu d'un Esquimau est composé principalement de poisson et de viande. La composition physique et chimique de la diète joue un rôle important dans la formation et la prévention de la carie dentaire. C'est surtout la composition physique des aliments qui joue un rôle important dans l'immunité des peuples primitifs contre la carie dentaire et la manière de mastiquer leurs aliments.

Les peuples non-civilisés se régalent d'un repas ayant une consistance dûre, crue, tendineuse et fibreuse qui contribue énormément au développement de l'appareil masticatoire et d'une musculature puissante. L'art ou l'acte de la mastication se fait avec vigueur et, de cette manière, favorise une fonction adéquate des dents et d'hygiène buccale par un nettoyage mécanique qui empêche la formation de la carie.

Les peuples civilisés, au contraire, consomment les aliments mous, riches en sucre raffiné et préparés de façon à évi-

ter la nécessité d'une mastication vigoureuse. Le manque de fonction de l'appareil de mastication signifie absence de fonction pour les dents. Le manque de fonction des dents entraîne à son tour une pauvre hygiène buccale qui favorise la formation de carie. Le grand danger de l'absence d'exercise masticatoire au niveau des dents doit être mis en évidence par le dentiste du service de santé. L'éducation convenable du public, dirigée vers le choix de la diète équilibrée et la mastication adéquate, rentre dans le cadre des mesures prophylactiques contre la carie dentaire.

Le Conseil de la Santé dentaire de A.D.A. a déclaré ce qui suit au sujet de la diète: "Il est couramment admis que la décalcification de l'émail est causée par les acides produit par le sucre en fermentation. Pour cette raison, la consommation du sucre raffiné doit être règlementée (restricted). Cette règlementation s'applique à l'élimination des bonbons, sucreries, confiseries et boissons douces de la diète, *surtout pour les enfants.*

Les parents américains dépensent un billion de dollars par année pour payer les achats de bonbons et sucreries. On dépense aux Etats-Unis 64% de plus pour les sucreries par année, par capita, que pour les soins dentaires.[8]

Les test de la susceptibilité de la carie

Il serait souhaitable de voir le patient se soumettre à un examen périodique dentaire afin d'avoir le tableau complet de son état buccal. Les tests à faire sont d'ordre clinique, radiologique et de laboratoire. Seulement à base de cet examen complet de la bouche, on peut procéder à l'élaboration d'un plan de travail (traitement). On estime que les bactéries sont essentielles au processus de développement de la carie. Les lactobacilles sont identifiés avec le processus de la carie. Dans le choix de tests pour mesurer la susceptibilité vers la carie, il faut retenir certaine exigences:

1. Le résultat du test de susceptibilité doit être en corrélation avec l'examen clinique.
2. Doit être reproduit avec beaucoup d'exactitude.
3. Rapide et facile à pratiquer.
4. L'équipement nécessaire à l'exécution de l'analyse doit être simple.
5. Pas trop coûteux.

Le test le plus simple qui correspond à ces exigences est le compte des lactobacilles, selon la méthode de Snyder.

En 1940, Snyder a décrit un test colorimétrique qui permet un compte de lactobacilles au cabinet dentaire d'après un procédé simplifié. Ce test est basé sur la quantité de changement de la teinte de l'indicateur vert (bromocresol) résultant de la production de l'acide par les bactéries buccales dans un milieu de culture. Le test colorimétrique de Snyder dépend du changement de couleur du Cromocresol qui est vert ou jaune comme indice de la productivité de l'acide par les bactéries de la cavite buccale. Le dentiste peut obtenir, grâce au test de Snyder, une réponse pratique concernant l'activité de la carie de l'individu en 43 heures. Un test positif pendant les premières 24 heures indiquera une activité accrue de la carie, tandis qu'un changement négatif de couleur pendant 48 heures indiquera un degré d'activité minime de la carie.

Le spécimen de la salive est inoculé dans un milieu dextrose-agar muni d'un indicateur en couleur (bromocresol) et ensuite placé dans un incubateur pour 96 heures. Ce test est basé sur le principe de la mesure du potentiel de la production de l'acide par la salive. Les patients indiquant une carie rampante doivent être soumis à une réduction des lactobacilles à un niveau très bas afin de diminuer les attaques de la carie.[7]

La prévention et le contrôle des autres maladies dentaires

Nous avons discuté de différents moyens de prévention et de contrôle de la

carie dentaire. Le deuxième facteur qui menace l'intégrité de la dentition humaine appartient du groupe des maladies péridentaires.

Prévention des maladies péridentaires

Il est nécessaire de comprendre les idées et la technique moderne de la prévention des maladies gingivales, du tissu de support et de l'os alvéolaire. Les maladies péridentaires sont à l'origine de la perte précoce des dents chez les adultes qui peuvent être évitées dans la plupart des cas par des interventions préventives. La terminologie de la 'maladie péridentaire' a été adoptée par les périodontistes. L'épidémiologie de la 'maladie péridentaire' est basée exclusivement sur l'histoire de cas. Le manque de système standardisé d'examen de la 'maladie péridentaire' n'a pas permis l'élaboration d'une surveillance épidémiologique parmi les groupes de la population.

L'interprétation des films radiologiques nous permet de constater la perte progressive et graduelle de l'os alvéolaire pendant la vie. Plusieurs périodontistes acceptent la théorie de Gottlieb de "l'éruption passive et continue" basée sur la constatation de la diminution progressive de la hauteur de l'os alvéolaire qui englobe la racine dans l'alvéole et liée avec le vieillissement de l'individu.

Les histoires de cas de patients souffrant de diabète mellitique nous indiquent le degré de destruction du tissu péridentaire. Les dyscrasies sanguines, les perturbations endocriniennes, comme l'hyperparathyroidisme et les déficiences de la nutrition, se répercutent sur la santé des tissus péridentaires.

La classification

On peut envisager deux différents types cliniques de la destruction périodentaire.

1. *La Périodontite*

C'est une séquelle d'une gingivite non traitée avec extension de l'inflammation vers les tissus péridentaires accompagnée de formation de culs-de-sacs péridentaires (clapiers) et de destruction de l'os alvéolaire.

2. *La Périodontose*

C'est une dégénérescence progressive sans signe d'inflammation du tissu péridentaire accompagnée de la perte de l'os alvéolaire et migration spontanée des dents. La formation des culs-de-sacs est tardive.

3. *Le traumatisme occlusal*

C'est toute force d'origine occlusale qui a déjà détruit le tissu péridentaire et qui peut encore amener la destruction des tissus péridentaires. Le traumatisme occlusal est accompagné de la résorption gingivale et des changements dans l'espace péridentaire, épaississement inégal de la membrane péridentaire, perte de continuité de la lamina dura, mobilité des dents et lyse de l'os alvéolaire. Ces changements sont provoqués par les forces masticatoires anormales pendant une période de temps prolongé. L'occlusion traumatique ne constitue pas la cause de la maladie péridentaire mais plutôt un facteur qui aggrave les symptômes de la maladie péridentaire déjà existante. Les forces obliques, horizontales et latérales et la force anormale physique sont mal tolérées par la membrane péridentaire et favorisent l'inflammation de la membrane avec résorption de l'os alvéolaire adjacent.

Les procédures préventives et le contrôle

Le dentiste doit reconnaître l'importance du tableau étiologique des maladies péridentaires afin d'éliminer les facteurs étiologiques le plus tôt possible. Les principes généraux du traitement préventif sont les suivants:

1. Examen détaillé du patient à base de la radiographie complète de la bouche et de modèles d'étude.
2. Parfois il est nécessaire de demander des analyses supplémentaires comme d'urine, d'hémogramme, analyse et évaluation de la diète, métabolisme basal, etc.
3. L'importance de la prophylaxie avec l'élimination complète du tartre supragingival et sub-gingival à des intervalles réguliers.

4. Correction des points de contact défectueux.

5. Correction de la morphologie occlusale des dents.

6. Elimination des excès gingivaux, des obturations, des cuspides en poinçon et d'autres formes d'irritation locale.

7. Vérification de l'occlusion et, dans les cas spéciaux, il faut recourir à une *réhabilitation occlusale par le meulage sélectif et modification de la morphologie occlusale.*

8. Instruction (éducation) du patient à l'utilisation de la méthode rationnelle de brossage de dents selon la méthode de Stillman qui assure, non seulement le nettoyage des dents mais aussi le massage et la stimulation physiologique des gencives.

9. Education de la population sur l'hygiène buccale rationnelle.

10. L'importance de la nutrition équilibrée et l'élimination des excès alimentaires. [9]

L'importance du brossage des dents

Le brossage des dents accompagné du massage des gencives agit comme un stimulant, aide beaucoup à maintenir la propreté de la cavité buccale, à améliorer nettement l'haleine et en même temps aide à la prévention de la carie et des maladies péridentaires.

Le but du brossage des dents

1. Elimination des débris qui collent à la surface des dents, des micro-organismes et des dépôts de tartre mou supragingival.

2. Elimination des débris alimentaires et des micro-organismes accumulés dans les espaces interdentaires en dessous des points de contact, entre les dents.

3. Le brossage doit être accompagné de massage des gencives, afin d'activer la circulation sanguine et favoriser la kératinisation d'épithélium.

4. Le brossage ne doit pas blesser, ni irriter le tissu gingival, ce qui favorise les atrophies gingivales.

5. Une mauvaise technique de brossage peut conduire vers l'érosion des dents.

6. Les taches de sang sur la brosse indiquent une inflammation gingivale ou une mauvaise technique de brossage.

7. Surveillance étroite de la technique de brossage des dents.

La valeur des dentifrices

Le dentiste est souvent interrogé sur le choix de dentifrice. Il semble que le dentiste du service de santé doit porter une attention spéciale sur l'education du public au sujet de la valeur réelle des pâtes dentifrices. Le marché est inondé de différentes marques de dentifrices qui prétendent avoir une action inhibitrice des enzymes et le pouvoir de guérir les maladies péridentaires. Les *pâtes dentifrices n'ont aucune valeur thérapeutique pour guérir les maladies péridentaires, chroniques.* La majorité de la population se sert de la pâte dentifrice pour améliorer l'haleine buccale par suite du bon goût de la pâte; par son action légèrement abrasive, la surface des dents subit un polissage. On peut donc lui attribuer une valeur plutôt cosmétique, par son action détergente.

En résumé, la fonction des dentifrices actuels se présente ainsi:

1. aide au nettoyage des dents
2. améliore et parfume l'haleine buccale
3. rend la procédure du brossage des dents plus agréable.

Il faut prévenir les patients de ne pas employer les pâtes dentifrices qui sont:

1. trop abrasives (danger d'érosion d'émail et d'exposition du cément)
2. paralysantes de l'action enzymatique de la salive
3. Trop dispendieuses.

Etant donné que les bactéries ne causent pas les maladies péridentaires, mais les aggravent, (Pelletier) la valeur des dentifrices médicamenteux est douteuse. Il est impossible de stériliser la cavité buccale et même par la seule stérilisation on ne peut pas guérir la maladie péridentaire. L'objectif de traitement consiste à l'élimination des culs-de sacs (clapier) par une gingivectomie chirurgicale ou par le curetage de la membrane épithéliale du sac après l'élimination des calculs.[7]

Les malocclusions

La fréquence des malocclusions et de l'encombrement des dents sur les arcades dentaires fait l'objet de nombreux rapports de la part des spécialistes de la santé publique. L'étude faite au sujet de l'examen de 7,400 enfants de l'Etat du Michigan a permis de constater que 27% des enfants ont eu besoin d'un traitement orthodontique. Parmi les plus jeunes enfants, environ la moitié avait besoin d'une stricte observation (surveillance) par un orthodontiste. Parmi les enfants de 13 à 14 ans, un quart avait besoin d'un traitement curatif d'orthodontie.

Une conférence était convoquée en 1948 par le Bureau des enfants des Etats-Unis pour découvrir les méthodes effectives de traitement des difformités dento-faciales. Selon le rapport public de cette conférence, les difformités dento-faciales doivent être considérées comme une *invalidité* et doivent être incluses dans le programme du service dentaire de santé publique.

Parmi les difformités qui demandent une attention spéciale, il faut mentionner les fissures velo-palatines, les becs-de-lièvres, les ankyloses temporo-mandibulaires et les malocclusions graves qui résultent de la maladie ou de traumatisme des maxillaires et les malocclusions associées avec les défauts que présentent un obstacle sérieux au dévelopement normal d'éducation et de travail.[9]

Diagnostic orthodontique par le dentiste de service de santé

1. Très souvent, le praticien dépiste une malocclusion dans un stade initial chez le patient jeune. La question se pose devant lui d'établir le diagnostic et éventuellement de donner un conseil aux parents concernant le temps favorable au début d'un traitement.

2. Il est important que le dentiste de service de santé sache reconnaître l'occlusion normale ou anormale pendant les différents stades de la croissance physiologique et de développement.

3. Le temps d'application de traitement orthodontique peut se diviser en deux phases:

a) Thérapie orthodontique préventive,
b) Thérapie orthodontique curative.

a) Le traitement orthodontique préventif concerne la dentition primaire et mixte et consiste à la mise en bouche d'appareils de maintien pour obtenir le blocage des dents de six ans, afin de maintenir l'intégrité des arcades dentaires. A part les appareils de maintien, toutes les malocclusions et pseudo-malocclusions doivent être surveillées et les parents doivent être mis en garde de leur existence. Certains types de malocclusion de Classe I d'Angle, labio-linguo-version d'une dent, peuvent être réduites par des moyens très simples.

b) Le traitement orthodontique curatif entre dans le domaine de l'orthopédie maxille-faciale et peut être institué seulement par l'orthodontiste qui applique un traitement moderne et hautement spécialisé, afin de réduire la malocclusion existante. Le temps d'installer la thérapie orthodontique curative varie avec chaque cas. C'est le stade de développement de la malocclusion qui joue un rôle décisif plutôt que l'âge chronologique.

4. Certains types de malocclusion peuvent être traités pendant les deux périodes de dentition mixte et permanente.

5. Les malocclusions peuvent être décelées dans le stade initial de développement, mais le temps de traitement à instaurer est déterminé plus tard.

6. La correction précoce de certains types de malocclusion peut prévenir le désordre futur et la nécessité d'un traitement orthodontique ultérieur ou éventuellement réduire la gravité de la malocclusion. Néanmoins, il faut pas oublier le grand nombre de *récidives des traitements préventifs*.

7. Etant donné que le dentiste de service de santé est le premier à dépister la malocclusion, la responsabilité qui pèse sur lui est grande. Pour qu'il puisse

remplir sa fonction efficacement, il faut qu'il soit armé de connaissances suffisantes qui lui permettront d'envisager ce problème des malocclusions en toute confiance et compétence.[7]

Le cancer de la bouche

La prévention des lésions cancéreuses de la bouche. Il est difficile de s'imaginer un bon fonctionnement d'un service de santé, surtout dans un hôpital, qui ne remplira pas la fonction de centre de dépistage des lésions cancéreuses bénignes, malignes et précancéreuses.

Les notions récentes sur les lésions cancéreuses nous fournissent une base suffisante qui permet de dépister une lésion cancéreuse de la bouche. Pourtant le nombre des fatalités causées par les lésions cancéreuses des lèvres, de la joue de la langue, du plancher de la bouche, du palais et des gencives est assez élevé et il pourrait être évité par le dépistage précoce du dentiste. Les statistiques faites par la Société américaine anticancéreuse nous fournissent des chiffres sur les décès causés par le cancer de la bouche. En 1950, on a enregistré 3,214 décès aux Etats-Unis, causés par le cancer de la bouche, donc un taux de mortalité de deux cas pour 100,000. Selon Lloyd 10% de toutes les lésions cancéreuses chez l'homme et 2% chez la femme sont d'origine buccale. 20,000 personnes ont souffert de cancer de la cavité buccale en 1947.

Le cancer de la bouche est une maladie qui concerne non seulement les adultes mais aussi les enfants. Les cancérologues nous rapportent que le cancer est responsable d'un décès sur neuf, chez les enfants entre les âges de 1 à 14 ans. Les statistiques de l'hopital Memorial de New York City montrent un chiffre de 60% de patients souffrant du cancer de la bouche qui ont consulté d'abord le dentiste, mais leur lésion n'avait pas été reconnue cancéreuse . . . Le dentiste doit se rendre compte que, dans la plupart des cas, il est le premier à être consulté par les patients cancéreux et que de sa vigilance dépend la vie de son patient.

L'étiologie du cancer est assez obscure. Il est généralement admis que la leucoplasie et l'hyperplasie de l'épithélium dûes à une irritation locale sont rangées parmi les lésions précancéreuses qui peuvent évoluer vers le stade malin. Plusieurs facteurs prédisposent à des lésions cancéreuses de la cavité buccale. On peut citer les suivants:

1. Irritations locales provenant des dents rugueuses
2. Restaurations mal faites
3. Dentiers mal ajustés
4. Excès de tabac
5. Radiations
6. Fonction déficientes des glandes endocriniennes
7. Mauvaise nutrition
8. Virus

(à suivre)

Nouvelles de l'Association

Réunion annuelle de l'A.D.C.

Le Bureau des Gouverneurs de l'Association dentaire canadienne se réunira à Winnipeg du 19 au 22 juin et le Congrès National suivra cette réunion pour se poursuivre jusqu'au 26 juin 1957.

Déductibilité de sommes consacrées à des rentes

Dans son discours du budget prononcé le 14 mars 1957, le Ministre des Finances déclarait: "Le gouvernement désire établir une politique générale qui permettrait à tous les contribuables, employés ou non, de remettre à plus tard le paiement d'impôt sur des sommes spécifiques qu'ils consacrent à l'établissement d'un fond de retraite. Ce privilège est d'une portée générale.

"Pour profiter de ces déductions d'impôt, le contribuable devra inclure dans son rapport un reçu indiquant le montant qu'il a consacré à des rentes d'un type déterminé. Ces rentes doivent être payables en montant égaux annuels durant toute la vie du contribuable et doivent être continuées

après sa mort à son épouse pour des sommes égales à celles qu'il recevait de son vivant. Ces rentes doivent s'étendre sur une période d'au moins quinze ans et elles peuvent commencer à l'âge désiré par le contribuable; cependant, elles ne peuvent pas débuter au delà de soixante-dix ans. Toutefois, une fois que le contribuable a commencé à retirer ses rentes d'après un plan approuvé par le gouvernement, il ne peut plus déduire de son impôt des montants qu'il consacre à son fonds de retraite. Ces rentes ne peuvent être transférables et la compagnie qui les paie ne peut s'en servir comme valeur de rachat ou comme garantie collatérale pour un prêt. Les primes que le contribuable débourse ne sont pas taxables, mais les sommes qu'il reçoit sont évidemment taxables.

"Les sommes consacrées à un plan de retraite défini plus haut sont déductibles de l'impôt sur le revenu jusqu'à un plafond équivalent à 10 pour cent du revenu total du contribuable, mais le montant en dollars ne doit pas dépasser $2,500. Si, par ailleurs, un contribuable souscrit actuellement à un fonds de retraite reconnu sur la base d'employeur-employé, la limite en dollars qu'il pourrait déduire de son impôt pour un autre plan de pension, en comptant les sommes qu'il déduit déjà, ne doit pas dépasser $1,500, par année. Si, par exemple, un employé contribue maintenant 6% de son salaire à un fonds de pension, il peut, de son propre chef, utiliser un autre 4% de son revenu pour s'établir un autre plan de retraite, qui consolide celui qu'il a déjà avec son employeur, mais le montant déductible ne doit jamais dépasser $1,500."

Parmi les projets de loi proposés à la Chambre des Communes pour amender la loi de l'Impôt sur le Revenu, la clause no 11 spécifie en partie:

"Que pour 1957 et pour les années imposables à suivre, un individu puisse déduire du total de ses revenus, les sommes qu'il a versées à un fonds de retraite approuvé et que, dans ce but, la loi de l'Impôt sur le Revenu soit amendée pour permettre les dites recommandations . . ."

Tous ces plans de pensions doivent être approuvés par le Ministre des Finances.

Depuis plusieurs années, l'Association dentaire canadienne, en même temps que d'autres organismes nationaux, faisait des représentations pour faire amender dans ce sens la loi de l'Impôt sur le Revenu. L'Association a tenu à manifester au Ministre sa reconnaissance pour la décision qu'il vient de prendre.

A notre avis, ces amendements favorisent grandement les membres de la profession dentaire. Il s'écoulera encore quelque temps avant que les plans qui seront proposés reçoivent l'approbation du Ministère. On croit que très bientôt le plan d'assurance-pension de l'A.D.C. aura des détails à communiquer à ce sujet.

Fluoruration — Association medicale américaine

"En réponse à des demandes qui lui avaient été adressées au sujet de son attitude sur la question de fluoruration, l'Association médicale américaine a fait la déclaration officielle suivante: L'Association médicale américaine n'a pas changé son opinion au sujet de la fluoruration de l'eau de consommation pour prévenir la carie dentaire chez les enfants.

"A son assemblée de décembre 1951, le Bureau des Délégués avait endossé unanimement le principe de fluoruration de l'eau de consommation et son attitude n'a pas changé.

"La décision du Bureau des Délégués à son assemblée de novembre 1956 a été mal interprétée, quand on a crû que l'attitude de l'A.M.A. à ce sujet avait été modifiée. Tel n'est pas le cas. A cette occasion, le Bureau des Délégués a tout simplement demandé au Conseil des Médicaments et au Conseil des Aliments et de Nutrition de l'Association d'entreprendre une étude conjointe des renseignements actuellement disponibles au sujet de la fluoruration de l'eau destinée à la consommation du public et de lui soumettre à sa réunion qui doit avoir lieu à Philadelphie en décembre 1957, un rapport documenté sur leurs constatations et toutes les recommandations qui leur seraient suggérées par cette enquête." Le 18 avril 1957.

Une ville d'Alberta, la première, adopte la fluoruration

Fairview (population: 1,000), une ville du district de Peace River, a voté avec une majorité considérable (sur 178 bulletins de vote, 163 se sont prononcés en faveur) de fluorer l'eau de son aqueduc. Il y avait 14 votes contre la mesure et un bulletin de vote a été annulé. On croit que la ville de Fairview est la première ville d'Alberta à tenir un plébiscite sur la question. Les électeurs ont voté en faveur dans la proportion de 92.1%. La fluoruration de l'eau sera faite dans le nouvel aqueduc que la ville fera installer bientôt.

Pamphlet sur la politique de santé dentaire

L'Association vient de publier en fascicule sa politique en matière de santé dentaire, politique qui a été approuvé au cours de sa dernière assemblée annuelle. On peut se procurer de ces fascicules en s'adressant à l'association.

Note de la rédaction—Dans les Délibérations "1956" de l'Association dentaire canadienne, page 78, paraissait un bref historique des facultés dentaires de l'Université de Montréal et de l'Université McGill. Le confrère Paul-Emile Poitras désire apporter des rectifications à ces énoncés des Délibérations.

Collège Dentaire Bilingue de Bishop

A la suite de nombreuses recherches, vérifiées à différentes sources, je crois véridiques les notes en ma possession.

Le docteur William-George Beers, aidé des docteurs C.-F.-F. Trestler, Stevens Globensky, J.-H. Bourdon et d'autres demandèrent une école dentaire bilingue à Montreal qui deviendrait la propriété de l'Association des Chirurgiens-Dentistes de la province de Québec. Au mois d'octobre 1892, cette école dentaire bilingue fut ouverte au coin nord-ouest des rues Cathcart et Phillips Square, avec une vingtaine d'élèves dont un seul est encore vivant, C.-W.-H. Rondeau. Après trois sessions de cours pratiques et théoriques, les étudiants étaient autorisés à se présenter aux examens pour obtenir une licence en chirurgie dentaire. En 1902, les professeurs eurent à enseigner la science dentaire pendant quatre sessions.

Les présidents de l'école dentaire bilingue furent:

W.-G. Beers	1892-1896	W.-J. Giles	1900-1901
J.-H. Bourdon (intérim.)	1896-1897	Joseph Globensky	1901-1902
Stevens Globensky	1897-1899	nom inconnu	1902-1903
W.-J. Keer	1899-1900	Peter Brown	1903-1904

Comme les universités sont seules dans le Québec à donner le titre de docteur, l'école dentaire bilingue s'affilia à l'Ecole de Médecine de l'Université Bishop de Lennoxville, en 1895, pour que le parchemin de docteur en chirurgie dentaire fut reconnu. L'Ecole de Médecine Bishop, en décembre 1910, ferma ses portes et l'université McGill hérita des élèves.

La clinique dentaire bilingue, en 1898, fut déménagée au coin nord-ouest des rues Sainte-Catherine et Saint-Laurent et y resta jusqu'en 1907 inclusivement alors que les étudiants de langue anglaise furent installés au General Hospital et les étudiants de langue française furent établis dans l'Edifice La Patrie, rue Sainte-Catherine.

Faculté de chirurgie dentaire de l'Université de Montréal

Les docteurs Eudore Dubeau, Joseph Nolin, J.-G.-A. Gendreau, après maintes démarches, eurent la permission de Mgr A.-O. Mathieu, recteur, de diriger à Montreal une école dentaire catholique et française, affiliée à l'Université Laval à laquelle le vice-recteur de Montréal, Mgr A. Archambault, assura pouvoir de donner des cours théoriques dès septembre 1904. Mgr Dauth, en septembre 1909, vice-recteur de Montréal à l'époque, logea la clinique et les salles de cours à l'hospice Saint-Joseph, coin des rues Saint-Hubert et Demontigny. En 1914, sir Lomer Gouin, premier ministre de la province de Québec, inaugura une nouvelle batisse où était situé l'hôpital dentaire et l'école.

Les biens de la corporation dentaire, propriétés de Laval ou de certains professeurs (je l'ignore) furent transmis à l'Université de Montréal, à sa création en 1920. L'année suivante, l'école dentaire Laval devenait faculté de chirurgie dentaire de l'Université de Montréal. Elle transporta ses penates avec les autres facultés et écoles à la montagne, en 1942.

Ses doyens furent de 1904 à 1944 le docteur Eudore Dubeau et, depuis 1944, le docteur Ernest Charron.

Faculté de chirurgie dentaire de l'Université McGill

Le docteur Peter Brown, en 1904, accepta de créer une école dentaire qui serait dépendante de la faculté de médecine McGill et donnerait le titre de *Maître en chirurgie dentaire*. Ce degré fut remplacé par le parchemin de *Docteur en chirurgie dentaire,* lorsque l'école de médecine Bishop (décembre 1910) discontinua son enseignement.

Le docteur D.-J. Berwick, ayant succédé comme président au docteur Brown, céda sa place au docteur A.-W. Thornton, en 1913, nommé doyen, en 1920.

Le docteur Arthur-L. Walsh, en 1927, fut choisi doyen et le docteur Daniel-Prescott Mowry eut son tour, en 1948. A la mort de ce dernier, au mois d'août 1955, le docteur James McCutcheon fut préféré à plusieurs autres pour devenir doyen de la faculté de chirurgie dentaire McGill.

Paul-Emile Poitras

Volume 23
Number 7
Toronto
July, 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

An Analysis of Some Operative Procedures Currently Being Used in Paedodontics*

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The nature of some of the fundamental dental research projects currently in progress [7, 9, 10, 14] seems to indicate that the day may be near at hand when dental caries and periodontal disease can be controlled. However, until every citizen receives the maximum benefits from fluoridation and until many other facts about dental disease are known dentists will still have to depend very heavily on restorative procedures for the maintenance of good oral health in the majority of their patients.

Only within the last fifteen years or so has the profession recognized that for restorative procedures to have maximum benefits, treatment must begin with the young patient. The Canadian Dental Association has strongly supported this philosophy in its recent policy statement on health insurance [17]. Statement 19 listed under the heading "Treatment Services" reads as follows:

"Owing to the almost universal need of dental treatment service and the lack in numbers of available personnel the plan should include initially only the younger age groups."

Because of the problem of inadequate coverage for treatment services it behooves the dental profession not only to increase its numbers but also to review

* Presented at the annual meeting of the C.S.D.C., Toronto, Ontario, May 12th, 1957.

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and appraise some of the restorative and operative procedures being used. It is necessary to determine whether these procedures are adequate and what difficulties are being encountered in their execution.

The procedures that have been chosen for review at this particular time are as follows:

1) Class II amalgam restoration for primary molars.
2) Pre-formed stainless steel crown.

Class II Amalgam Restoration

Cavity Preparation:

In addition to the large number of clinical papers [1, 5, 8, 15] on this subject, several rather interesting research projects [6, 13] have been carried out. The most significant of these was motivated, according to Lampshire, the author, by a concern for failures in class II amalgam restorations in primary molars. Interestingly enough a clinical study of amalgam failures in primary teeth similar to that done on restorations for permanent teeth [3] is still not available.

According to Lampshire, the significant factors in the success of class II restorations in primary molars as far as cavity preparation is concerned are as follows:

1) Isthmus width approximately one-quarter of the buccal lingual diameter of the tooth — a so-called "Wide Isthmus".
2) Rounded pulpal floor *together* with a rounded pulpal axial line angle.
3) Side retention grooves.

A number of other factors such as sloping of the proximal box toward the occlusal, rounding the gingival buccal and gingival lingual line angles, and extending the preparation to a free cleansing area with cavo surface angles of 90 degrees, were important but to a lesser degree.

It would seem that if all of these principles were incorporated in the preparation of class II cavities in primary molars, and all other factors related to amalgam manipulation were equal, then failures would no longer be a problem. However, a study of proximal amalgam restorations placed in the paedodontic clinic at the University of Alberta over the past several years revealed that more than a few failures have occurred and that they were significantly higher in lower primary first molars as compared to the second primary molars or the upper primary first molars. [16]

Whether this is related to the frequency in distribution and extent of the carious lesions in primary teeth [11] or to morphological factors is not clear. The relationship of the latter to failure of class II restorations in primary teeth has not received much attention. In Figure 1 diagrams of permanent and primary first molars reproduced from ground sections reveal one rather pertinent morphological variation. The lower primary first molar has a more pronounced taper toward the occlusal surface as compared to $\underline{6}/$, $\overline{6}/$, and $\overline{D}/$. If all four of these teeth were restored with average size restorations and sections were made in the area indicated in the occlusal view, it would be seen that at areas A, A, a, a, enamel would be well supported with dentine. If the carious lesions were more extensive as indicated by the dotted lines, then in $\underline{6}/$, $\overline{6}/$ and $\underline{D}/$ the enamel would still be well supported. However, in $\overline{D}/$ the enamel at 'a' is supported only a thin column of dentine and thus liable to fracture.

Considering this problem from the occlusal aspect (Figure 2) it is observed that when the caries is extensive and the tooth is restored with extension for prevention as in the conventional manner for permanent teeth, the marginal enamel (Figure 2C) is poorly supported and thus liable to fracture. An attempt to solve this problem by extending the preparation buccally and lingually to sound dentine then presents another problem in that there is too much flare for amalgam, and thus the restoration is liable to fracture in this area. (Figure 2B)

It is common observation that even though the rules of cavity preparation as

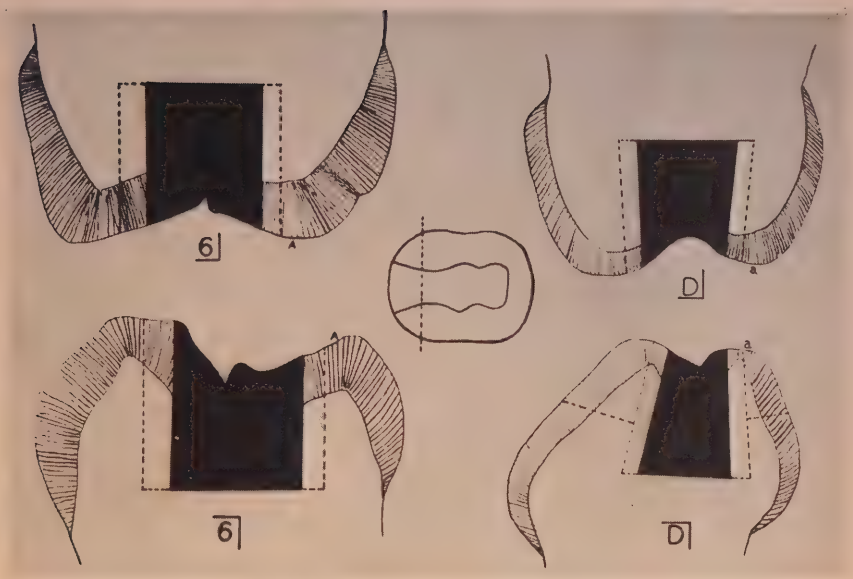

FIG. 1 — Cross section of primary and permanent 1st molars showing that as the size of the cavity increases marginal enamel at points 'A', 'A' and 'a' in 6/, 6/ and D/ is still well supported.

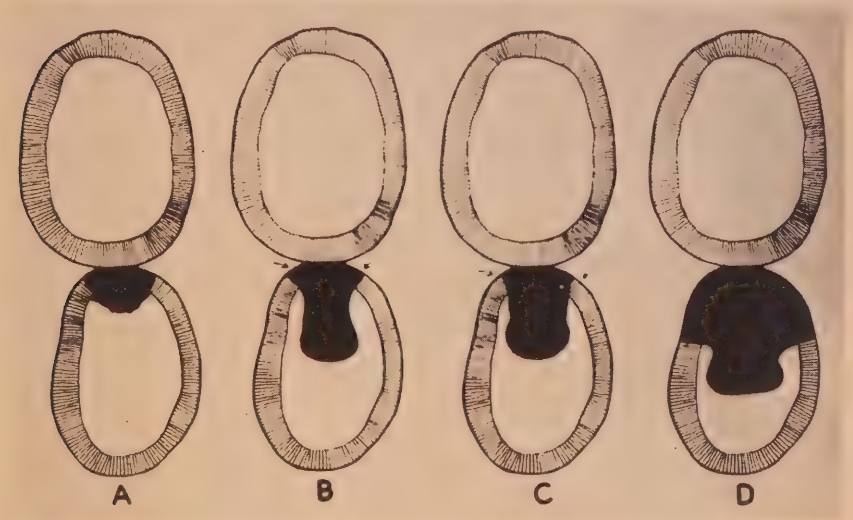

FIG. 2 — A, occlusal view of large cavity in lower primary 1st molar. Enamel is well supported in preparation B but there is excessive flare. In C flare is not excessive but marginal enamel is poorly supported. In D, marginal enamel is well supported and cavo-surface angle is the desired 90 degrees.

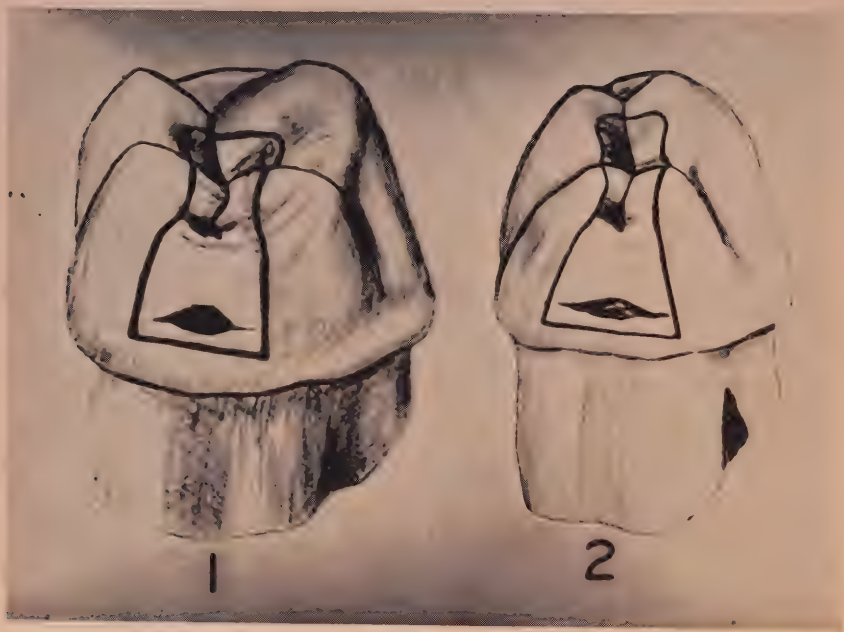

FIG. 3 — Diagram of class II cavity outline for a wide type lower 1st primary molar (1), and for a lower 1st primary molar with excessive occlusal taper (2).

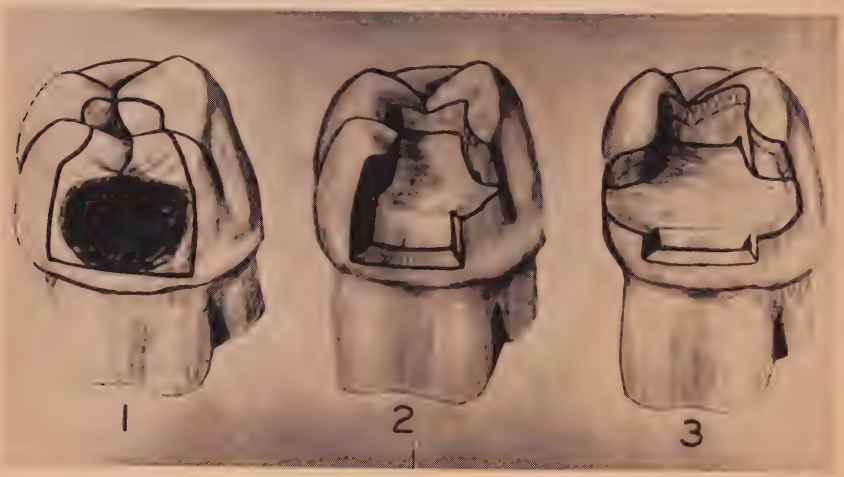

FIG. 4 — Outline of conventional cavity preparation for large proximal cavity in a primary molar (1). Suggested cavity preparation to overcome weak buccal and/or lingual walls 2 and 3.

established by Lampshire's study are carefully followed for class II restorations the proximal margins often become deeply creviced even though fractures at the isthmus are rare. The fact that these proximal marginal failures do not happen in all cases can also be explained by the morphological variation exhibited by different lower primary first molars[2]. Although some types taper markedly toward the occlusal, others do not.

Thus, it is suggested that in addition to Lampshire's recommendations, the following be considered in order to overcome the problem of morphological variation in primary molars:

1) For beginning class II cavities the proximal outline might be either inverted or box type depending upon the type of tooth being restored.
2) As the size of the cavity progresses, one or both of the cusps should be capped, depending on the extent of the caries on the proximal surface.

FIG. 5 — Actual case as suggested in Fig. 3 above.

FIG. 6 — Actual case as suggested in Fig 4 (2) above.

Examples of small, medium and large type class II cavities restored in amalgam in accordance with the above principles are shown in Figures 3, 4, 5, 6, and 7.

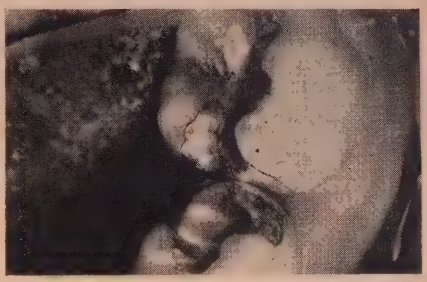

FIG. 7—Actual case as suggested in Fig. 4 (3) above.

Matrix:

The ultimate object of the matrix is to reproduce the original contour as closely as possible in the restoration. That this is a perplexing problem is evidenced by the infinite variety of advocated techniques and the large number of commercial retainers available.

Phillips and his associates [12] have shown that the significant factor in reproducing the original proximal contour in permanent teeth is the manner in which the *band* is handled. Regardless of the retaining device or the type of tooth to be restored, gingival wedging is of paramount importance. Both contouring and wedging are necessary for optimum results in certain types of proximal surfaces. Whether these conclusions are applicable to primary teeth may be open to question because of the morphological variation between primary and permanent molars.

In the routine practice of paedodontics a most desirable property as far as a matrix is concerned is that it facilitates multiple restorative procedures in a quadrant. The commercial retainers do not rate very high in this respect. In addition, where the rubber dam is used, they are quite cumbersome when the tooth to be restored is the clamp bearing tooth. How-

ever, those who do not use the dam find them helpful in maintaining cotton rolls. The pinched and soldered (or welded) band and the "tee" band both facilitate multiple restorative procedures in a quadrant but the former may be difficult to remove [4] while the latter, although easy to remove, usually requires compound support. As the search for a better matrix continues, the following might be given some rather serious thought:

If the individual members of the dental profession had spent as many hours in solving the caries problem as have been used in the search for an "easy" matrix procedure, the practice of dentistry might be quite different today.

Pre-formed Stainless Steel Crowns

Just when the pre-formed gold crown seemed almost to be discarded in this country as an acceptable restorative procedure for adults, the pre-formed steel crown has most definitely come into its own as an invaluable restoration for primary and young permanent teeth.

The Posterior Crown:

The technical procedure seems well established: mesial and distal slices are made followed by reduction of the cusps to clear the occlusion. This is followed by rounding of shoulders, selection of the proper crown and contouring the gingival with suitable pliers. (2) This description might leave the novice with the impression that the insertion of a well fitting crown which is a reasonably good duplication of the original tooth, is a rather simple procedure. Such is not always the case however. Periodically, cases do appear in which considerable difficulty is encountered. In the author's experience the most common error seen amongst undergraduate and graduate students learning this procedure is failure to round the shoulders of the tooth to be crowned.

A typical problem is illustrated in Figure 8. In (1) the shoulders have not been reduced (or have been inadequately reduced) and what appears to be the correct crown has been selected. Contouring the crown with a No. 112 plier will belly out the crown so that the protruding shoulder will no longer prevent seating of the crown. However, what frequently happens is illustrated in (2), the gingival circumference is reduced and the crown is still difficult to seat. Various methods can be employed to overcome this problem: the crown may be briskly malleted to place or re-worked with a No 114 plier. Selecting a larger crown is another method of overcoming the problem but a larger tooth than the original will result and jamming is encountered with the approximating teeth during the seating. If the careful attention is given to rounding the shoulders in all areas of the tooth as seen in (4) even a fine beaked flat nosed plier can be used for adapting the crown in the gingival area.

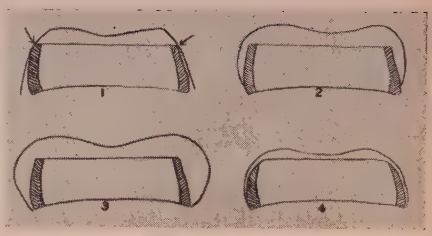

FIG. 8 — (1) Steel crown fails to seat because of insufficient rounding of shoulders. (2) Excessive contouring of crown with 114 or 112 plier. (3) Effect of larger sized crown. (4) Crown goes easily to seat after shoulders have been reduced.

Anterior Steel Crown:

The economic factor in the restoration of a fractured anterior tooth by means of a gold restoration has undoubtedly aided the pre-formed steel crown to gain a prominent place as a restorative procedure.

The challenging problem with this restoration is that tooth which is too large for a crown of one size but is undersized for the next largest crown. These crowns can be stretched rather efficiently with band stretcher No. 1 - 18. However, as in

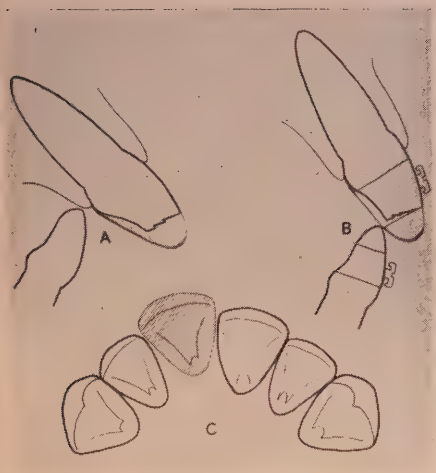

FIG. 9 — (A) Fractured incisor in severe class II malocclusion restored by a crown with excessive lingual contour. (B) and (C) Desired orthodontic tooth movement can not be accomplished.

the case of the posterior crown removal of certain areas of the tooth greatly facilitates seating of the crown. The mesial labial and the distal labial line angles, especially at the gingival, are areas which usually need some minor reduction with a pencil stone after the mesial and distal slices have been made.

Cutting out the labial surface of the crown and restoring the lost tooth structure with silicate or resin greatly improves the aesthetics but invariably reduces the retentive quality.

One very important factor which is rather irritating to the orthodontist is seen in Fig. 9. The case in 'A' has a severe class II malocclusion such that the lower incisors almost contact the lingual gingiva of the alveolar process in the maxillae. The fractured upper incisor has been restored with a steel crown. Since there is no occlusal interference, no thought was given to closely adapting the steel crown to the lingual surface of the tooth. When such cases are subject to orthodontic treatment the restored tooth cannot be brought to its correct position in the arch. This crown may be said to have a "built in malocclusion".

Summary and Conclusions

1. In view of the recent policy statement by the Canadian Dental Association endorsing dentistry for children as of paramount importance in providing more effective dental services for the population, dentists are strongly urged to take an active interest in the Canadian Society of Dentistry for Children. Membership in the society is unquestionably the best method for the general practitioner to keep abreast of recent developments.

2. It is important for the society to review frequently and appraise treatment methods in order to provide more efficient service.

3. The class II amalgam restoration has been analyzed and the suggestion is made that the morphological differences between primary and permanent molars play an important role in the success or failure of class II restorations, especially lower primary first molars.

4. The pre-formed steel crown restoration has been analyzed and it is suggested that careful attention to the preparation of the tooth will eliminate most of the difficulties encountered in fitting the

FIG. 10 — Actual case as described in Fig. 9 |1.

crowns. The occlusal factor in restoring a fractured incisor for a patient with a class II malocclusion should receive careful attention because of the possibility of future orthodontic treatment.

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Statement on Dentifrices Containing Sodium Fluoride

by the RESEARCH COMMITTEE of The Canadian Dental Association

1. The claims for these dentifrices and the evidence which is available to support the claims have been reviewed by this Committee.

The Committee considers that any dentifrice intended for the prevention of dental caries must be subjected to adequate clinical tests with respect to effectiveness and safety.

3. Clinical studies (references appended) dealing with the effects of dentifrices containing sodium fluoride on dental caries do not support the claim that therapeutic benefits accrue from the use of such dentifrices. The more recent dentifrice formulas containing greater concentrations of ionic fluoride have not been tested clinically.

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The Effect of Gutta Percha, Silver Points, and Rickert's Root Sealer on Bone Healing

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A knowledge of the reactions of living tissues to foreign substances used in obliterating root canals is essential in planning endodontic treatment. Since these materials remain permanently embedded, it is obvious that those inciting the least reaction are to be preferred.

Experimentation with various metals has been done over fifty years to find a suitable metal splint that could be used to immobilize fractures. Venables[4] et al reviewed the literature and found that there was a good deal of conflicting opinion and inconsistent experimental observations. The earlier workers based their findings on the inherent toxicity of the particular metal ion or ions being observed, as well as on their solubility. Venables showed that in addition to these phenomena, the electrolytic action of two dissimilar metals in the form of an alloy, or a plating of one on top of the other, caused the formation of irritating metallic salts in the local tissues. His experiments showed that by using vitallium he had a substance that was to all intents and purposes insoluble in body fluids and was a homogeneous alloy and as such its components lost their identity and the alloy as a whole acts as a new metal with its own electromotive series potential.

In 1926 Puterbaugh[2] showed that metals such as gold, silver, copper, lead and amalgam all caused irritation if pushed through the apex of a tooth. He also showed that gutta percha was the least irritating of all materials tried out by him. In the same year Hopewell-Smith[1] showed that when a foreign substance was pushed through the apex it induced a foreign body tissue reaction with its attendant phagocytic activities. Rickert and Dixon (1931)[3] studied implants in tissues of a number of materials. They found that copper, copper amalgam were very irritating, amounting to necrosis. Silver amalgam, though it caused no necrosis, was still very irritating. Pure silver caused only the slightest fibrosis. Baked porcelain gave the least reaction. So also did Rickert's Root Sealer, which is composed as follows:

Powder

Zinc oxide C.P.	41.21%
Silver precipitate C.P.	30.00
White rosin	16.00
Thymol iodide	12.79

Liquid

Oil of Cloves U.S.P.	78.00%
Canada Balsam	12.00

The purpose of this study was to show the reactions of living tissues to various foreign body implants at different time intervals.

Methods and Materials

The three test materials used were pure silver points, gutta percha points prepared for endodontic use, and Rickert's Root Sealer. The silver and gutta percha points were cut into 2mm. lengths suitable for implantation. The Rickert's Root sealer was mixed on a glass slab and as it hardened, small portions were rolled out between glass slides until they had a diameter of approximately 1mm. When fully hardened they too were cut into 2mm. lengths.

To prepare these materials for implantation they were stored in a 1:500 aqueous solution of Metaphen for at least two

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days prior to use because heat sterilization was not practicable. The surgical implantation procedure was to use anaesthetized guinea pigs—sodium pentobarbital intraperitoneally—3.5 mgm/100 gm. body weight. The skin along the anterior border of the tibia was incised and the muscles spread apart to expose the bone. A vertical row of four holes was bored through the shaft of the tibia penetrating to the medulla, the holes being about 3mm. apart. For this a #701 bur was used. The four holes in each leg were filled by implants of the same test material so that later we would have four examples of the same type of implant. The skin was closed by silk sutures and each animal was given 3,000 units of penicillin G procaine intramuscularly.

A total of 15 guinea pig tibias was thus treated, 5 with each of the 3 test implants. Examples of each test material were taken at intervals of 1, 2, 3, 4 and 6 months, and histological sections of the experimental areas were prepared.

Results

At the one month interval there was complete bony repair of the drilled holes in all cases and a slight amount of bone proliferation on the endosteal surfaces adjacent to all implants. In each case the remainder of the surface of the implant was covered by a very thin fibrous capsule and was otherwise without further signs of cellular disturbance.

At 2 months there was more bony hyperplasia extending along the implants, but the fibrous capsule remained as before, a minimal connective tissue covering. The Rickert sealer implant showed some loss of its substance, appearing as an open sponge-like framework.

At the 6 month interval the silver and gutta percha implants appeared unchanged from the earlier stages, there being a few trabeculae of bone lying alongside, between which the implant was covered by a very thin layer of connective tissue. The amount of gutta percha in the implant appeared unchanged. However, in one instance a few granules of gutta percha were see in macrophages lying adjacent to the implant, but none appeared at any distance from it. The Rickert's sealer at 6 months showed a lot of resorption, estimated at 90%, through the remainder of which there was a connective tissue framework growing and replacing it. Next to the perimeter were widely scattered spicules of bone similar in amount to the 4 months' specimens. There was a lot of phagocytosis of sealer material as evi-

FIG. 1. RICKERT'S SEALER — 2 Months

(a) Complete bony repair of drilled hole through cortex.

(b) Normal marrow tissue.

(c) Thin capsule about implant.

(d) Most of sealer material resorbed.

FIG. 2. SILVER POINT — 1 Month

(a) Shape of original bone cortex outlined by black line.

(b) Normal marrow tissue.

(c) Blank space originally occupied by silver point.

FIG. 3. GUTTA PERCHA — 1 Month

(a) Gutta percha covered by thin fibrous capsule.
(b) Normal marrow tissue.
(c) Drilled hole completely filled in by new bone.

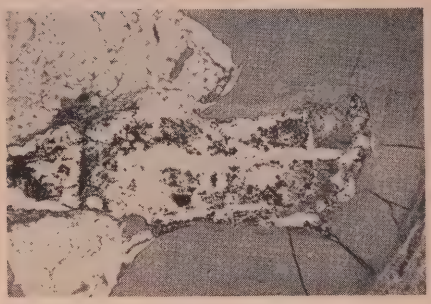

FIG. 4. RICKERT'S ROOT SEALER — 6 Months

(a) Slight bony proliferation implant.
(b) Sealer material largely resorbed and being replaced by fibrous tissue.
(c) Particles of sealer present in perivascular area of the periosteum.
(d) Normal marrow tissue.

FIG. 5. SILVER POINT — 6 Months

(a) Vacant space occupied by silver point.
(b) Slightly bony proliferation about silver point.
(c) Normal marrow tissue.

FIG. 6. GUTTA PERCHA — 6 Months

(a) Gutta percha point same density as at 1 month.
(b) Slight bony proliferation about gutta percha point.
(c) No foreign body reaction.
(d) Normal marrow tissue.

denced by its presence in macrophages located in the perivascular areas of the periosteum on the outside of the healed bone, the implant being entirely intraosseous.

Discussion

The results of this study are clearly the effects of the materials acting on the tissues locally. There is no question of infection influencing the picture as all cases healed readily, having been protected by penicillin during the post-operative period. The minimal amount of bony proliferation and fibrosis about the three types of implanted materials confirmed the observations of earlier workers. In the cases of the silver and gutta percha, they are quite compatible with the adjacent living tissues, whether they be bone, fat, fibrous or haematopoietic tissues, and there was no sustained phagocytic action.

In the case of Rickert's sealer the basic tissue reaction was similar, being a minimal fibrosis and bony hyperplasia. However, a foreign body reaction showed sustained phagocytosis of its component par-

ticles even at the end of 6 months, which attests the non-permanent nature of such a material.

Conclusion

Bony implants of silver, gutta percha, and Rickert's root sealer tested for various periods up to 6 months in guinea pigs showed that all three had a high degree of compatibility with living tissues and that in addition, silver and gutta percha were both stable and permanent, while Rickert's sealer was non-permanent, being removed by phagocytosis.

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A Survey of Recent Methods of Caries Control*

First Prize Essay — War Memorial Award Competition

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I. Introduction

Recent surveys of caries prevalence in Ontario communities show that 98% of 12 to 14 year old children have been afflicted by dental caries. In Ontario there are nearly half as many dentists as physicians and surgeons treating the whole remainder of the body, and this number is far short of that required to provide even barely adequate restorative dentistry for the whole population. During 1953, an amount equal to one-sixth the cost of all other medical and surgical treatment was paid by Canadians for dental treatment which did not prevent recurrence of the disease or reduce its incidence.[55]

Reduction of dental disease will only be accomplished by the application of preventive measures. To this end much work has been done in recent years with promising results.

This essay will deal only with those procedures, nutrients and other therapeutic agents which show a preventive or controlling action or promise of such an action. Others will be mentioned when it is felt that controversy concerning them warrants such a mention. For reasons of space, discussion will be confined to considerations of the efficacy of the various methods, although clinical procedures will be mentioned when pertinent.

IIa. A Brief Description of The Theory of Dental Caries

It has been shown that four basic factors are necessary for the caries process to occur. These are: tooth substance; bacteria, present as the normal oral flora; substrate for these bacteria in the form of fermentable carbohydrate; dental

* Written as an undergraduate for the War Memorial Competition.

plaque, a film composed largely of protein, on the tooth surface.

Acidogenic bacteria break down refined carbohydrate in food debris to organic acids. The dental plaque has the ability to concentrate monosaccharides, disaccharides and acid on the tooth surface. Acid dissolution of the inorganic tooth fraction then occurs, leaving the organic structure to be broken down by proteolytic bacteria. This proteolysis follows in the wake of the acid decalcification. The same process occurs in dentine and cementum.

The caries process is intermittent, its periods of activity depending on a supply of suitable bacterial substrate found in food debris adhering to the teeth for a varying period of time after eating.[32, 39]

IIB. A Brief Description of the Inorganic Structure of Tooth Tissues

The inorganic constituents of dental tissues are laid down in the form of an hydroxyapatite crystal lattice $[Ca_3(PO_4)_2]_3 Ca(OH)_2$ or $Ca_{10}(PO_4)_6(OH)_2$. This is the basis for inorganic structure in all animal hard tissues. The crystal lattice itself is stable but not the proportions of the ions. It demonstrates the property of ion-exchange and so tolerates a large number of substitutions, e.g., Cl for F or OH, Mg for Ca. Because the elements of the lattice structure are ionic it also demonstrates adsorption of materials (e.g. CO_3) which remain outside the lattice structure. Enamel containing a high concentration of carbonate is more soluble in acid and more susceptible to caries.[39]

III. Nutritional Methods

(a) *Carbohydrate restriction*

Theory of Action

Carbohydrate in a readily fermentable form is essential to the production of caries. Therefore an interference with this supply of bacterial substance should cause a corresponding decrease in caries incidence by reducing the "acid-producing potential" of the bacteria-carbohydrate-plaque combination.

This principle may be applied in two ways:

(1) Prophylactically, by eliminating or reducing the consumption of highly cariogenic substances and regulating the amount, frequency and time of intake of less cariogenic carbohydrates comprising a normal part of the daily diet. For maximum effect this regime should be imposed before the eruption of the deciduous dentition, both for its protection and to prevent the establishment of sweet-eating habits. This dietary restriction is intended to be carried into adult life with special precautions being taken during the periods of maximum caries activity occuring at about 4-5 and 18-20 years of age.[37]

(2) Therapeutically, carbohydrate restriction is practised to reduce individual cases of rampant caries. Salivary Lactobacillus Acidophilus is commonly employed as an index of caries activity. This is done by counting the number of colonies appearing on a tomato agar plate on which an amount of saliva has been cultured and expressing the result as the number of LBA per cc. of saliva.[32]

This method involves reduction of the LBA count by drastically reducing dietary carbohydrate and then gradually increasing it, keeping a constant check on the LBA count. At the end of this program the normal diet may be resumed and the count will usually remain low for six months to one year.[20]

Experimental and Clinical Evidence

It has been shown that caries may be produced in hamsters[13,22], rats[19,33,52] and monkeys [48] by feeding diets high in refined carbohydrates. Furthermore, susceptible animals will not develop caries unless they are fed such a diet or when they are fed these diets through a stomach tube, indicating that the role of carbohydrate is a local one.[31]

Comparisons of caries incidence in primitive and civilized societies, in coun-

tries with high and low carbohydrate consumption and in countries at war and at peace, indicate a correlation between caries and the amount of refined, dietary carbohydrate.[13]

Comparatively few studies have been done on the effects of manipulation of the sugar intake on dental caries. Many of these are of questionable value due to incomplete recording of caries activity and inadequate or absent control groups. The most valuable of these are the following.

Boyd,[13] from studies on 116 mentally deficient girls, found no caries increase as a result of feeding an additional 90-110 g. refined sugar per day. However, the study period was short and the sugar was ingested with other food at mealtime.

Mack[13] found a slight increase in caries when 234 boys in a childrens' home were fed up to 125 g. sugar per day for two years. The study is difficult to evaluate due to lack of a control group and insufficient data.

An investigation by King[25] showed no increase in caries as a result of the ingestion of candy at bed-time. Caries incidence data indicate that these subjects were probably of an unusually low susceptibility.

Jay[23] found that unrestricted ingestion of candy caused an increase in caries in 39% of his subjects. However, some of the candy given to the experimental group found its way into the hands of the controls, thus limiting the value of the results.

The most significant study of this type was carried out at Vipeholm Hospital, Lund, Sweden. This institution for mental defectives provided a large number of almost permanent patients whose diet could be rigidly controlled. The study was designed to determine whether an increase or decrease in fermentable carbohydrate would cause an increase or decrease in dental caries, and if so, whether physical consistency and time of ingestion affected caries activity.

The study extended from March, 1945 to July, 1951 and involved 436 patients divided into a control and six experimental groups. The time was divided into four main periods as follows:

Preparatory Period — Evaluation of analytical methods.

Vitamin Study Period — Adequate diet of 3000 cal. plus supplements of vitamins A, C, and D, Calcium lactate, sodium fluoride, 1 mg. fluoride in bone meal in the diets of different groups.

Carbohydrate Study I — Diet adequate except calorically. Carbohydrate variables of 1200 calories introduced.

Carbohydrate Study II — Adequate diet of 2700 cal. Carbohydrate variables of 300 calories introduced.

Sucrose, bread, chocolate, caramel, 8 toffees and 24 toffees were the variables added to the diets of different groups during the two carbohydrate study periods.

The supplements added to a nutritionally adequate diet during the vitamin study period did not influence caries activity.

Oral sugar clearance times, defined as the percentage of the day the saliva was sugar positive, were studied. A significant correlation between caries activity and high salivary sugar concentration coupled with a high clearance time was noted.

From the results of this study the following conclusions were drawn. There is a direct relationship between dental caries activity and intake of fermentable carbohydrate. An increase or decrease in sugar-rich food ingestion will cause respectively an increase or decrease in dental caries activity. It was also found that caries may continue to appear despite maximum restriction of dietary carbohydrate. Caries is especially likely to be increased if the sugar ingested is of such a consistency as to tend to adhere to the surfaces of the teeth, and especially if the sugar is consumed between meals in a form with a strong tendency to be retained on the surfaces of the teeth causing a temporary high sugar concentration on these surfaces. The danger of increased caries activity is greater as the clearance time of sugar from the saliva becomes greater. A high salivary sugar concentra-

tion with a high clearance time causes increased caries activity. The increase in caries activity under uniform experimental conditions varies widely from one person to another.[7, 14, 88]

A study of the practicability of severe carbohydrate restriction diets, in which dentists throughout Canada and the United States supervised a total of 440 of their own patients in this therapy, showed favourable results,[21] as have similar, subsequent experiments.[22] Since this time (1947), this plan has been adopted by various state health departments and caries control laboratories with varying degrees of success, but few reports of the results have been published.[22]

It is now established and accepted that a relationship exists between caries activity and the number of lactobacilli cultureable from the saliva.[40] A very definite correlation exists in cases of high caries activity and statistically for large numbers of subjects.[29] The correlation is doubtful in individual cases of low to moderate activity,[29] and the technical difficulties in arriving at consistent and accurate counts are great in any case.[32]

DISCUSSION AND CONCLUSIONS

It has been conclusively demonstrated that dental caries activity can be varied by manipulating the amount, physical consistency, time of ingestion and frequency of ingestion of fermentable carbohydrate. Lactobacillus Acidophilus may be reliably used as an index of caries activity in highly caries-active individuals and for large groups.

Rampant caries can be greatly reduced by severe carbohydrate restriction, but these diets are difficult to follow and therefore not practical in all cases.

(b) *Ingestion of Optimal Amounts of Fluoride*

THEORY OF ACTION

Fluoride, if it is available systemically at the time of calcification of the developing tooth, is substituted for part of the hydroxyl groups of the inorganic crystal lattice structure of the tooth tissues to form fluoroapatite. This structure is much less soluble in most of the organic acids, such as those produced by acidogenic oral organisms, than is hydroxyapatite.[6, 39]

There is speculation that the fluoride exerts its influence on caries susceptibility by affecting the carbonate content of the tooth.[39] It has also been suggested that fluoride liberated from the tooth surface may inhibit some bacteria involved in the caries process.[6]

Systemic fluoride will produce maximum inhibition of caries with minimal fluorosis if ingested during the period of tooth formation at a concentration of one part per million in drinking water. It will have no significant effect on already erupted teeth due to the comparatively slow rate of turnover of the inorganic elements of erupted teeth.[49]

CLINICAL AND EXPERIMENTAL EVIDENCE

Dean[8, 6, 32] has studied water fluoride content and DMF rate in 12 to 14 year old children in 21 cities in 4 states. He concluded that a fluoride concentration of 1.2 p.p.m. produced maximum caries reduction with minimal (barely detectable) fluorosis. He found that increasing the water fluoride above this value caused increasingly severe mottling with little added benefit in caries reduction.

Results of fluoridation studies in Evanston, Ill., Lewiston, Id., Madison and Sheboygan, Wis., and Marshall, Texas show reductions in caries incidence of up to 58% for permanent teeth and up to 53% for deciduous teeth, depending on the ages of the children and the length of time the fluoridation program has been in effect.[6]

At the end of its ten-year experiment in fluoridation, Brantford, Ontario shows approximately 60% reduction in DMF rate for children of continuous residence. Caries rate is decreased for both permanent and deciduous teeth provided that the child has received fluoridated water for about one year previous to the erup-

tion of the teeth. Recent immigrants to the city therefore receive some benefit. These findings are completely corroborated by similar studies in Newburgh and Grand Rapids in the United States.

A study by the United States Public Health Service has shown that the protection against caries extended until at least age forty-four years. Since the fluoride ion is believed to become part of the inorganic structure of the tooth there is good reason to expect the caries protection to be life-long.[41]

Many extensive studies of the vital statistics of all common major diseases including maternal and newborn death rates show no differences between artificially or naturally fluoridated areas and non-fluoridated areas.[6]

It has been shown that mottling of enamel is the first sign of chronic fluoride poisoning. At least moderate fluorosis occurs before any other manifestations. At 1 p.p.m. only very mild, barely detectable mottling occurs in a small number of cases. There is therefore no possibility of even low-grade chronic poisoning at this concentration.[32]

Bibby and others[3], in a preliminary study of the effectiveness of fluoride pills and lozenges, found no effect from the pills but concluded that the lozenges may have contributed to control. The study involved only a small number of subjects for a limited period of 14 months.

DISCUSSION AND CONCLUSIONS

Extensive studies have shown that ingestion of approximately 1 p.p.m. of sodium fluoride in water for at least one year prior to tooth eruption causes a caries reduction of up to approximately 60% depending on the age at which ingestion was commenced. No toxic effects or increase in incidence or severity of any disease occur as a result of this.

The effectiveness of fluoride lozenges and pills is still unproven.

Systemic fluoride probably exerts its effect on caries incidence by reducing the acid solubility of the tooth in some way. There is little evidence to support the bacterial inhibition theory.[6]

(c) *Effects of Selenium and Beryllium*

THEORY OF ACTION

Limited human and animal experiments indicate a possible relationship between caries incidence and beryllium and selenium intakes.

EXPERIMENTAL AND CLINICAL EVIDENCE

Eighty white rats were fed a coarse corn cariogenic diet for 100 days and received intraperitoneal Na_2SeO_3 in varying amounts. A tendency toward more caries was noted in the higher selenium groups but gross and histologic examination showed these doses to be toxic.[56]

Hadjimarkos and others[15] noted a correlation between caries and urinary selenium in a group of 53 children, half from each of two counties in Oregon. From animal experiments it was known that urinary selenium varies with the amount ingested. The difference in DMF index was unexplainable on the basis of other environmental factors.

Hamsters fed .02% $BeCl_2$ from conception to 24 days post-partum and placed on a cariogenic diet for 100 days, showed a very significant decrease in caries as compared to the control group not receiving the $BeCl_2$.[31]

DISCUSSION AND CONCLUSIONS

There is a possible correlation between caries and ingested selenium and beryllium but further work is needed to establish this.

(d) *Other Nutrients*

EXPERIMENTAL AND CLINICAL EVIDENCE

There is no conclusive evidence that additions of any of the other essential nutrients to an already nutritionally adequate diet has any inhibiting effect on human dental caries.

It has been shown that reducing children's dietary phosphorus results in the

developing teeth being low in phosphorus and high in carbonate, which is associated with an increased caries susceptibility.[39]

Reports on the effect of vitamin D on caries are conflicting but some indicate a correlation between inadequate dietary vitamin D or low sunlight exposure[45] and increased caries in children.[43, 38, 50, 57, 7] Vitamin D is reported to be important in the calcification of dentine and cementum (mesenchymal origin) but to have no effect on enamel (ectodermal origin).[49]

DISCUSSION AND CONCLUSIONS

No reliable evidence indicates a beneficial effect due to increasing already adequate nutrients in the diet.

Phosphorus and possibly vitamin D deficiencies may increase caries if imposed before eruption of the teeth. It is difficult to see how they could affect already erupted teeth which participate in the mineral metabolism of the body to a very limited extent.[49]

IV. Topical Application of Fluoride Solutions

THEORY OF ACTION

Fluoride solutions applied to the dried external enamel surface will cause some change in the external enamel layers rendering them more resistant to acid decalcification and thereby lowering their susceptibility to caries. The actual chemical mechanism is not clearly established. It has been suggested that the fluoride combines with the enamel structure to form fluoroapatite, that it is adsorbed to the crystal lattice as calcium fluoride, or that it combines with the organic matter surrounding the crystals in the prisms.[53]

EXPERIMENTAL AND CLINICAL EVIDENCE

It has been demonstrated in vitro and in vivo that topical fluoride may be taken up by the enamel with a resulting decrease in acid solubility[53] and increase in hardness. These two latter properties are considered unrelated.[39] The presence of calcium fluoride may be demonstrated in treated enamel as a deposit or in the enamel structure itself. The extent of this deposit varies with time of immersion and may be removed by washing. But since calcium fluoride is lower on Moh's hardness scale than hydroxyapatite, it has been postulated that the changes are due to a change from hydroxyapatite to fluoroapatite, which would explain the observed increase in hardness of fluoride-treated enamel.[53]

In a study involving several million children across the United States, Russell[8] reports a decrease in caries incidence of 40%. Applications of 2% sodium fluoride were made using the standard Knutson technique[28] at the ages of 3, 7, 10, and 13 years (i.e. as soon as possible after the eruption of the teeth).

These results are supported in adult studies by Kinkenberg and Bibby,[27] and Rickles and Becks.[44] Kutler and Ireland,[30] and Arnold and others[1] reported no reduction in caries incidence in similar adult studies from either single 1% or multiple 2% applications. All four of these studies, particularly that of Rickles and Becks, were made on relatively small groups and the concentrations and number of applications varied.

Dean[8] also suggests that the value of topical sodium fluoride in adults is questionable.

Limited studies indicate no additional effects of topical sodium fluoride in areas with optimally fluoridated water.[8]

Following Massler's report on the superior effectiveness of topical sodium silicofluoride over sodium fluoride, Peterson and Jordan[42] studied their comparative effects in a group of 610 children. Results after one year indicate the effect is probably greater with the fluoride. The difference in incidence rates is not statistically significant and this study therefore cannot be considered conclusive until more caries develops. Howell and others[20] investigated the relative effectiveness of topical sodium and stannous fluoride for a period of two years in 620 children. Two groups received 4 applications of sodium fluoride and 4 of stannous fluoride respectively, applied following Knutson's

technique. A third group received four applications of stannous fluoride as a spray for 4 minutes, and a fourth group was kept as a control. Prophylaxes and clinical examinations were performed at the beginning and the end of the study. The sodium fluoride group showed a 36% caries decrease and the stannous fluoride groups 59% (Knutson technique) and 65% (spray technique). Sodium fluoride provided greater protection for previously caries-free teeth than for those previously carious, while stannous fluoride demonstrated the reverse effect. In all three experimental groups the occlusal surfaces showed the greatest benefit while the proximal surfaces received less protection.

Reversals in diagnosis from carious to non-carious occurred in all three groups but about 3½ times more frequently in the stannous fluoride groups. The probability of chance occurrence of this is very small and it is therefore attributed to the difference in action of the two solutions. It is suggested that this phenomenon is associated with the arrest of incipient caries.

Slack also has found topical stannous fluoride to be effective in reducing caries incidence.[51]

DISCUSSION AND CONCLUSIONS

The ability of topical solutions of sodium fluoride, sodium silicofluoride and stannous fluoride to reduce caries incidence in children has been established although the mechanism of this reduction is not clear. The observed reduction in effect with time could be explained on the basis of washing out of calcium fluoride deposits. The value of topical fluoride in adults is questionable[53]. Topically applied stannous fluoride appears to be more effective in caries reduction than either sodium fluoride or silicofluoride. This is presumably due to the presence of the tin ion but its function is not known.

V. Therapeutic Dentifrices

(a) *Enzyme Inhibitors*

THEORY OF ACTION

These substances are intended to prevent acid forming on the tooth surface by interfering with the enzymes involved in the glycolytic chain or with the metabolism of the acidogenic organisms themselves. Many compounds inhibit the glycolytic chain, but in order to be useful they must be present on the tooth surface at the time of acid formation. Therefore if a compound could be found that would unite by absorption, adsorption or chemical combination with the plaque material and still retain its inhibiting action, it could be expected to have a reducing effect on caries in the area covered by the plaque. If the material were incorporated in a dentifrice, it would presumably become attached to that part of the plaque remaining after toothbrushing. It would have of course to be of such a nature that it would permeate the plaque to the tooth surface where the damaging effect of acid production occurs.[10]

CLINICAL AND EXPERIMENTAL EVIDENCE

The low urea-ammonium combination has been tested for effectiveness in humans by several investigators and the results suggest it to be completely ineffective.[10,40]

Studies involving the higher concentrations of urea-ammonium combinations are conflicting and inconclusive.[40]

No studies of the usefulness of chlorophyllin in dentifrices in human caries reduction have been reported, and animal in vitro experiments are conflicting. There is no evidence to support any therapeutic action.[40]

Only one of four studies on humans indicates a significant caries-reducing ability for penicillin dentifrices. Two others show only a small effect. This divergence of findings and the risk of sensitization and the development of penicillin-resistant strains of oral organisms precludes the use of a pencillin dentifrice.[12,16,17,40,54,58]

In 1953 Fosdick[12] reported a 57% reduction in a preliminary study of the effectiveness of a sodium-N-lauroyl sarcosinate dentifrice. These results may not be wholly attributable to the dentifrice since the control and experimental groups were not alike in oral hygiene habits.

Fosdick[12] also tested penicillin, sodium-N-lauroyl sarcosinate and dehydroacetate for inhibition of acid production in vivo. After one week's use they were found to inhibit pH drop on the enamel surface below the upper limit of the critical decalcifying range for enamel (pH 4.8-5.5).[39] The latter two continued to do so after nine months' use.

Forscher and Hess failed to duplicate these results with the use of a similar sodium-N-lauroyl sarcosinate toothpaste. They attributed this to the fact that different pH drops are produced in different areas of the mouth following a glucose rinse. It was concluded however that the pH measurement of a single plaque sample was reliable.

In 1954 Brudevold and Little[4] found no pH drop inhibition of plaque material from proximal surfaces after brushing the teeth with a sodium-N-lauroyl sarcosinate solution or a dentifrice containing sodium lauryl sarcoside and dehydroacetate for one week. Intra-oral measurement did show a pH drop inhibition after half an hour following a single lauroyl sarcoside rinse.

Brudevold, Little and Rowley,[5] using Fosdick's method of measuring the pH of scrapings of plaque material from proximal surfaces, found no inhibition following one week use of dehydroacetate, lauryl sulfate or lauryl sarcoside toothpastes or a lauryl sarcoside solution. Intra-oral pH readings on the labial enamel surface showed an acid reduction effect with glucose rinses, detectable up to 6 2/3 hours following a single rinse of lauryl sarcoside or lauryl sulfate.

DISCUSSION AND CONCLUSIONS

The results of Fosdick, Brudevold and others, and Forscher and Hess demonstrate a need for more carefully standardized pH measurement procedures in these studies.

The observation of Muntz and Miller[5] that agents may exert an effect on the surface of thick plaque but fail to penetrate it sufficiently, supports the negative findings of Brudevold and others in interproximal areas (heavy plaque deposits) and their positive results on labial surfaces (scanty plaque deposits) and may be a partial explanation for them. This would indicate that these substances are least effective where caries is most prevalent.

Only one poorly controlled study on the effect of sodium-N-lauroyl sarcosinate on human dental caries has been done. Much more work is needed to clarify this question.

(b) *Stannous Fluoride*

THEORY OF ACTION

The postulated mode of action of this compound in a dentifrice is the same as that of topically applied solutions.

CLINICAL AND EXPERIMENTAL EVIDENCE

Muhler and others[35,36] have studied the effect on caries incidence of a dentifrice containing stannous fluoride in 423 children and 322 adults for a period of one year. The observed reduction in DMF teeth was 51% for the children's group and 54% for the adults. This experiment agrees with that of Howell and others with respect to reversals in diagnosis and greater effect on previously carious teeth. The adult study indicates that the effects of stannous fluoride and good oral hygiene are additive.

Studies have been made employing sodium fluoride liquid and paste dentifrices for periods of one or two years. None of these has shown a reduction in caries incidence due to the fluoride, although a temporary reduction in lactobacillus count has been reported.[2,40,47]

DISCUSSION AND CONCLUSIONS

Two studies by the same workers show a favourable effect from the use of a dentifrice containing stannous fluoride.

Corroboration from other independent researchers is required to make this conclusive.

Sodium fluoride dentifrices appear to be ineffective.

VI. Oral Hygiene

THEORY OF ACTION

A collection of carbohydrate substrate on the surfaces of the teeth is conducive to the development of caries. Therefore removal of this debris, especially from non-self-cleaning areas, will tend to reduce caries activity.

CLINICAL AND EXPERIMENTAL EVIDENCE

Both active caries and low caries activity have been reported in populations with poor oral hygiene by various workers.[40]

The few studies that have been done on this indicate a caries reduction as a result of good oral hygiene in humans.[11,24]

DISCUSSION AND CONCLUSIONS

There is no simple correlation between caries and oral hygiene. There is evidence of a significant reduction in caries in humans when the teeth are brushed immediately after eating.[40]

VII. Summary and Conclusions

It has been conclusively demonstrated that dental caries activity can be increased or decreased by elevating or lowering the dietary intake of fermentable carbohydrate. The danger of sugar increasing caries is greater if the sugar is consumed frequently, especially between meals and in a form tending to adhere to the teeth, thereby producing a high salivary sugar concentration and a high clearance time. The danger of caries attack is lessened if sugar is taken less often, with meals and in a form more readily eliminated from the mouth by salivary flow.

Lactobacillus counts bear a definite relationship to caries activity for large numbers of individuals or for cases of high caries activity. They may be employed as an index of caries activity in caries reduction therapy involving severe carbohydrate restriction.

These low carbohydrate diets are effective but difficult to follow. Their usefulness is therefore limited to highly co-operative patients.

Extensive evidence proves that fluoride in water supplies is an effective means of reducing dental caries and indicates that this effect is life-long. Maximum effect is produced by a concentration of slightly more than one part per million and this amount causes no toxic effects or in no way influences the incidence or course of any other disease. Barely detectable mottling may be produced in a small percentage of cases.

The effectiveness of fluoride lozenges and pills is unproven.

There is a possible correlation between caries and dietary selenium and beryllium.

No reliable evidence has been produced showing a beneficial effect on caries from varying the intake of any other nutrient in an already adequate diet, although the importance of a nutritionally adequate diet in tooth development is recognized.

Studies indicate that stannous fluoride applied topically is more effective than sodium fluoride or sodium silicofluoride in reducing caries in children.

Topical sodium fluoride has been shown to reduce caries in children but its effects in adults, or in any age group in a dentifrice, are doubtful.

Two studies by the same workers indicate beneficial results from the use of a dentifrice containing stannous fluoride by children and adults. These studies appear accurate and several of their observations have been corroborated by work on topical stannous fluoride, but tests by independent workers are still required to make this conclusive.

Further work is required before the value of any non-fluoride dentifrice additive can be accepted.

There is no simple correlation between oral hygiene and caries but evidence exists of a significant reduction as a result of brushing immediately after eating.

Appendix A

DIETARY CARIES CONTROL AND ITS EFFECT ON LBA COUNT

A brief description of the dietary program for the control of dental caries.[20]

Plan I. Diet adequate calorically and nutritionally for the age, weight, height and activity of the patient but containing only 100 grams of carbohydrate (no sugar). Followed for two weeks.

Plan II. Plan I plus unsweetened vegetables and foods containing starch or flour. Followed for two weeks or longer until LBA count is reduced.

Plan III. Plan II plus sugar with one meal per day. Followed for two weeks.

Plan IV. Unrestricted diet.

Lactobacillus counts are performed at the beginning of the program and at the completion of Plans I, II and III. These are invariably low after Plan I. If the count is still low after Plan II, the patient proceeds with Plan III; if not, Plan II is followed until it is reduced. The diet is unrestricted if the fourth count is low also, but if it becomes elevated within six months to one year Plan II or even Plan I is again instituted and the program is repeated from this point.

The relation of Lactobacillus Acidophilus counts to carbohydrate in the diet of patients studied in 1947.[21,22]

No. of patients	Diet Plan	Patients with reduced counts		Patients with increased counts	
		No.	%	No.	%
809	started I	675	83.4	—	—
563	continued on II	459	81.6	104	18.4
313	continued on III	230	73.4	83	26.5
127	continued on IV	103	81.2	24	18.8

The relation of lactobacillus counts to carbohydrate in diet of patients studied in 1954-55.[22]

No. of patients	Diet Plan	Patients with reduced counts	
		No.	%
350	I	302	86.7
299	II	233	78.0
167	III	149	89.2
73	IV	65	90.0

The relation of lactobacillus counts to variations in the carbohydrate content of the diet.[22]

LBA count (range)	Initial count	After diet plan I	After diet plan II			After diet plan III	After diet plan IV
			Less than 10,000	More than 10,000	Total after plan II		
Total (No.)	350	348	241	58	299	167	73
0-10,000	1.7	77.3	71.8	43.1	66.3	77.8	16.4
11,000-114,000	50.7	18.7	23.7	43.0	27.5	22.2	16.4
over 114,000	47.4	4.4	4.5	13.6	6.5	—	—

In the above tables a count is considered reduced if it is 85% lower than the original, or in the case of counts which were only moderately high originally (10,000-50,000), it has been reduced to less than 10,000.

Effect of dietary treatment on salivary lactobacillus counts of patients treated through the dental caries control laboratory of Ohio State University.[22,26]

	Total number	Low LBA counts		High LBA counts		High counts later reduced to low counts for 6 months or more
		No.	%	No.	%	
Total number examined	1089	278	26	811	74	
Low counts which later became high	101					
High counts: dietary treatment undertaken, Plan I supposedly followed for at least 2 weeks	531	410	77	121	23	
After Plan II	376	318	85	58	15	1
After Plan III	306	225	74	81	26	2
After at least 2 weeks on Plan IV (unrestricted diet)	202	142	70	60	30	5
After 6 mo. on Plan IV	126	91	72	35	28	14
After 1 yr. on Plan IV	75	53	71	22	29	10
After 2 yr. on Plan IV	34	25	74	9	26	3
After 3 or more yr. on Plan IV	23	14	61	9	39	2

The relatively small number of cases followed for more than six months is the result of patients voluntarily discontinuing the collection of saliva samples.

Appendix B

Summary of dental caries findings in 7,257 selected white school children age 12 to 14 years, in 21 cities of 4 states in relation to the fluoride content of the public water supply.

City and state	No. of children examined	Percent of children caries free	No. of DMF teeth per child with caries experience	Fluoride conc. in ppm. public water supply
Galesburg, Ill.	273	27.8	2.36	1.9
Colorado Springs, Colo.	404	28.5	2.46	2.6
Elmhurst, Ill.	170	25.3	2.52	1.8
Maywood, Ill.	171	29.8	2.58	1.2
Aurora, Ill.	633	23.5	2.81	1.2
East Moline, Ill.	152	20.4	3.03	1.2
Joliet, Ill.	447	18.3	3.23	1.3
Kewanee, Ill.	123	17.9	3.43	0.9
Pueblo, Colo.	614	10.6	4.12	0.6
Elgin, Ill.	403	11.4	4.44	0.5
Marion, Ohio	263	5.7	5.56	0.4
Lima, Ohio	454	2.2	6.52	0.3
Evanston, Ill.	256	3.9	6.73	0.0
Middletown, Ohio	370	1.9	7.03	0.2
Quincey, Ill.	330	2.4	7.06	0.1
Oak Park, Ill.	329	4.3	7.22	0.0
Zanesville, Ohio	459	2.6	7.33	0.2
Portsmouth, Ohio	469	1.3	7.72	0.1
Waukegan, Ill.	423	3.1	8.10	0.0
Elkhart, Ind.	278	1.4	8.23	0.1
Michigan City, Mich.	236	0.0	10.37	0.1

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Appendix C

Status of research on enzyme-inhibitors as of January, 1956, according to Fosdick.[10]

Compound	Acid formation tests		Caries tests	
	Inhibition in saliva-sugar mixtures	Absorption by plaque material	Animal	Humans
Ammonia	x	–	–	x
Low urea				–
				–
				–
				–
High urea	x	–	no expt.	x
Chlortetracycline	x	x	x	no. expt.
Cu chlorophyllin	x	–	x	,,
Na dehydroacetate	x	x	x	,,
			–	
$CuSO_4$	x	x	x	,,
Dehydroacetic acid	x	–	–	,,
Glyceric acid	x	–	–	,,
Iodoacetic acid	x	x	x	,,
Penicillin G	x	x	x	x
			x	
			x	
Procaine pen.	x	no expt.	no expt.	–
Na N-lauroyl sarcosinate	x	x	x	x
Na dehydroacetateoxalate	x	x	x	x
Oxytetracycline	x	x	x	no expt.
Tyrothrycin	x	x	x	x
Vitamin K	x	–	–	x (after meals)

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It has been shown that expressing unfavourable opinions as to former treatments by one physician about his predecessor or, in fact, criticizing another physician by obvious remarks, by gesture, by innuendo, or by a writing may be dangerous to the critic as well as damaging to all physicians. It may instigate a malpractice suit against the criticized physician, which, if successful even by settlement, will affect the fund held by the insurance carrier for payment of claims as well as for defense of suits, and will increase therefore the cost of malpractice insurance for all physicians. It may further subject the critic to a suit for libel and slander, during which he will have to defend himself as well as pay any resulting judgment. His malpractice insurance agreement does not cover him in the event of such suit. A substantial judgment against him in such a case, which is not at all improbable, can put him into a financial decline from which he may never recover. This is the practical side of the warning. "Speak not ill of your brother practitioner and ye will not hurt or be hurt!"

Irwin Alper, L.L.B., M.D.,
The Journal of the American Medical Association, Feb. 1957

Radiation Hazards Resulting from the Use of Dental X-Ray Units

Statement Prepared by the Research Committee of the Canadian Dental Association

1. The use of the X-ray in dentistry is necessary for the proper diagnosis, and therefore proper treatment, of disease.

2. The utilization of the X-ray as an aid in diagnosis has increased markedly both in medicine and dentistry during the past few years. [4]

3. Although millions of dental radiographs have been taken annually on this continent in the course of dental practice, there have been no known reports of injury to individual patients as a result of exposure [5]. Using routine precautions the exposure in the region of the face may approach an erythematous dose during a full mouth survey (Max. 15 roentgens x 30 exposures, or 450 roentgens), but with modern technique and equipment (see item 5 below) the dose will be far below this level (about 0.07 roentgens x 30 exposures, or 2.1 roentgens) [4]

4. The gonadal exposure (genetic hazard) resulting from the routine use of dental X-ray units is small, being at present in the order of 1 - 3 per cent of the natural background radiation[4, 6]. It is, therefore, thought that the potential genetic danger is offset by the benefits derived from the use of the unit. In considering the genetic hazard, the gonadal exposure between birth and forty years of age is most important.

5. The dangers from radiation resulting from the use of dental X-ray units thus appear to be low; nevertheless, because of the recent marked increase in their use, *the Committee strongly recommends that every precaution be exercised* by

(a) Avoiding indiscriminate use of this diagnostic aid.

(b) Reducing exposure to a minimum by the use of modern equipment, including the long cone, high kilovoltage, filters, and fast film.

(c) Applying information concerning previous X-ray exposure of patients.

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The Research Committee was assisted in preparing this statement by Dr. H. E. Johns, Head of the Division of Physics, Ontario Cancer Institute, Toronto, by Dr. J. Munn, Head of the Department of Radiology, Hospital for Sick Children, Toronto, and by Dr. M. N. Rockman, Head of the Department of Radiology, Faculty of Dentistry, University of Toronto.

ABSTRACTS

The Scope of Dental Medicine

LOUIS J. BAUME, D.M.D., M.S.

Dental Medicine is concerned with local diseases of the oral structures as well as the pathologic manifestations of general or systemic diseases within these organs. Unfortunately this clearcut distinction according to our present aetiological knowledge and differential diagnosis status is established only for a small group of oral lesions. In the last decades, a tremendous amount of clinical and laboratory research work has been done in order to trace the pathways of pathologic reactions in the body system to the oral tissues. In the light of these tests, caries as well as parodontopathies are recognized as being initiated by external causes, but conditioned by internal constitutional factors. By putting due emphasis upon the systemic aspects, Dental Medicine has contributed much to better management of those common dental diseases, in contrast to a mere temporary suppression of their symptoms by the local approach.

In the highest professional mission, the aim of dental medicine is the prevention of disorders of oral structures or the early treatment of incipient threats to their proper development and health. A reliable basis from which to advance and practise those methods can only be acquired by a thorough understanding of the physiologic body development and metabolism as well as with an adequate knowledge of possible causes of pathologic changes. The task thus is twofold. On one side, it consists of the control of possible environmental interferences of endogenous origin such as nutritional, metabolic, or endocrine disturbances or of exogenous nature such as functional, bacterio-chemical and other injuries, with the unfolding or maintaining of a normal genetic pattern. As viral and enzymatic insults may already act upon the developing organism to produce embryopathies such as clefts or hypoplasias, preventive measures must be installed at a very early time. On the other hand, if that pattern, due to an inherited inferiority, tends to develop into malformation, early treatment has to forestall an irreversible pathologic formation.

Both prophylactic measures imply an intimate human urge which though not likely to be ever accomplished, continually fosters and spurs our endeavours for advantageous betterments and assurance of improvements as expressed in the instinctive fact finding search. Dental research, ennobled by its altruistic devotion to serve the prospective welfare

of the people, spearheads this drive into the aetiologic investigation. All the many useful current procedures and devices to prevent the consequences of dental diseases, whether viewed from the standpoint of arrest or correction, restoration or even replacement, have resulted from research. Integration of every phase of this search and research with the concept of Dental Medicine in its broad biologic approach is hoped to advance greatly the difficult, irksome and therefore delayed progress in the elimination of dental diseases, so that at last there may dawn the day when the ultimate goal of an integral prevention is attained.

Journal of Dental Medicine
Vol. 12, No. 2, April 1957.

Bruxism, a Classification: Critical Review

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Bruxism may affect so large a percentage of the population as to approach universality. This condition appears at practically all ages in man, and may be as old as man himself. It may occur in several generations of a family – how much is due to heredity and how much to mimicry is a question to be considered.

Research is indicated as to the etiology of bruxism, whether it be on a local, systemic, pyschological or occupational basis. Many causes have been advanced but not all have been substantiated. Distinction should be made as to whether or not concomitant, incidental, predisposing factors or true causes are being dealt with.

The dental profession should become more observant of the characteristic manifestation and incidence of bruxism, especially in patients with periodontal disease, as the unconscious quality of the act keeps it often undetected.

The major causes of bruxism seem to be on a psychological basis and concerned with the personality of the individual.

Acts which have heretofore been considered innocent ones, may now be construed as vicious concomitants of the habit of bruxism, such acts as the chewing of gum and the biting and clenching of foreign objects. These will bear closer scrutiny as decisive factors in the increasing incidence of bruxism.

It would appear that the act of bruxism affords the individual an opportunity to take out on his own body the frustrations and tensions which beset his personality.

The role of physical and mental stress as causation to bruxism in daily living is highly significant. The occupational background of patients afflicted with abnormal bruxistic habits should be examined in order to determine how the relief from tension or the release of tension may be channeled into less destructive paths.

Extensive research studies in children who have bruxism are recommended with questions to be considered:

(1) What kind of child develops the act? (2) Is there a factual basis for the relationship between the sucking habits and the bruxism habits of the child? (3) Is there a common denominator in children who develop bruxism? If suitable answers can be found to these questions,

and if adequate early assistance is given the child, can the condition be prevented and further damage minimized?

Research, combined with psychological and clinical laboratory studies, is also indicated into the instances involving the jaws and teeth in seemingly innocent acts which tend to degenerate into the habit of bruxism, so that the part apparently played by the compulsion of the psyche can be fully evaluated by both the medical and dental professions.

The Journal of the American Dental Assoc.
Volume 54, No. 5. May 1957

Caries-inhibiting Value of a Dentifrice Containing Stannous Fluoride: First Year Report of a Supervised Toothbrushing Study

WILLIAM A. JORDAN, D.D.S., M.P.H. and JOHN K. PETERSON, D.D.S., M.P.H.

A clinical evaluation study at Bloomington, Minn., has been set up to obtain more information concerning the value of a stannous fluoride-containing dentrifice.

Included in the study were 628 children who were in the third and fourth grades at the time of the initial examination in May, 1955 and whose parents signed authorizations for participation.

The dentrifice was supplied to the children in plain tubes, with only the label "E" or "H" appearing on the carton. The two dentifrices appeared to be identical in taste, consistency and appearance. They differed only in that one contained 0.4 per cent stannous fluoride and 1 per cent stannous pyrophosphate and had a pH of 4.9; the pH of the control paste was 6.8.

The identity of the dentrifice containing the stannous fluoride was unknown to the authors until after the first year anniversary examinations were completed.

There were 35 per cent fewer DMF teeth developed in the group using the stannous fluoride dentrifice than developed in the control group during the first year. These findings are similar to those reported by Muhler and co-workers after one year of unsupervised use of a stannous fluoride dentifrice.

There was a greater reduction in the incidence of caries on less susceptible surfaces. The greatest reduction occurred on the buccolingual surfaces (41 per cent) and the least on the occlusal surfaces (23 per cent).

Fifty-nine per cent of the children in the group using the stannous fluoride dentifrice, in contrast to 44 per cent of the children in the control group, did not develop new DMF teeth. The probability of this occurring by chance is .001. Correspondingly larger numbers of children in the control group developed 1 to 7 DMF teeth. The same pattern occurred in the incidence of DMF surfaces, where 38 per cent of the study group and 20 per cent of the control group did not develop new DMF surfaces. This difference has a probability of less than .0001.

The study dentrifice contained 0.4 per cent stannous fluoride. This is a fluoride concentration of 1,000 ppm. Each home and school in Bloomington has its own well to supply water. Samples taken in four scattered locations showed a fluoride content of .09 to .11 ppm. In January,

1956, urine samples were obtained from 40 boys in each group to determine if there was any change in the urine fluoride level from incidental swallowing of the fluoride dentifrice during toothbrushing. The average fluoride concentration in the urine of the boys using the stannous fluoride-containing dentifrice was 0.198 ppm, whereas the corresponding fluoride concentration from the boys using the stannous fluoride-free control dentifrice was 0.196 ppm. These concentrations were remarkably close and indicate that there was no increase in the urinary fluoride level resulting from the use of the study dentrifice. These findings corroborate previous work by Schweinsberger and Muhler.

The prevalence of stained teeth in the children using both dentrifices was recorded at the time of the second examination. Forty children had noticeably stained teeth in the stannous fluoride group and 45 were found with similar staining in the control group. This staining was typical of that found on surfaces that are not self-cleansing in mouths with poor oral hygiene. Casual observations rather than rigid criteria were used in diagnosing "stained teeth."

The Journal of the American Dental Assoc.
Volume 54, No. 5. May 1957.

Force Distribution in Splinted Anterior Teeth

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For splinting periodontally involved upper anterior teeth, a straight arch form usually does not afford as favourable a prognosis as a curved arch form. A curved arch splint places the centre of rotation posterior to the central incisor area. Occlusal pressure here in a curved arch form causes the splint to revolve about the centre of rotation. Since this centre is distal to the application of force, the stress applied to the periodontal support in the central area is more apical in direction than in a straight line splint. In the latter case the centre of rotation passes through all the teeth in the apical third and causes a tipping movement.

Occlusal force at the end of a curved splint also affords a more equitable distribution of stress to the other abutments. In a straight line splint the teeth toward the midline receive less stress from the horizontal rotation.

In a natural dentition there is usually more torque on the upper than on the lower anterior teeth. This is true whether there is a fairly deep or a shallow vertical overbite.

In a lower anterior curved arch splint, occlusal pressure in the central incisor area causes the splint to rotate around the centre of rotation, which passes near the apical third of the canines. The teeth in the central area have stress exerted on the periodontal support in a more apical direction than in a straight arch splint.

When we have a fairly deep overbite case with a curved arch, there is less torque on the lower splint than when there is a shallow overbite. This is due to the line of force passing closer to the centre of rotation in the deep overbite case, producing less torque. The reverse is true for the upper curved arch splint with a fairly deep overbite, which produces more torque than a shallow overbite.

Oral Surgery, Oral Medicine, and Oral Pathology
Vol. 10, No. 5. May 1957

The Use of Ultrasonics in Root Canal Therapy and Root Resection

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The technique of root canal therapy employing the ultrasonic handpiece as a means of opening, enlarging and cleaning out the contents of the canal has important potentials for the future.

Utilizing the conventional technique of rotating a barbed broach one quarter of a turn and then withdrawing it from the canal, the operator is faced with the possibility that he may inadvertently fracture the apex of the broach if the barbs engage in the walls of the canal and cannot be withdrawn.

If the apical third of the instrument fractures and results in a completely closed canal, the operator is unable to proceed further.

In contrast to this, with the ultrasonic dental unit, the type of motion is such that no rotation of the canal is necessary. The gentle, reciprocal massaging action is all that is required to allow the natural vibrational direction of the point to do the job. The nature of the mechanical vibration also produces a forward motion of filling material if it is thin enough to flow and takes on the pattern of a vortex off the point of the ultrasonic reamer or file. This directional drive beyond the tip of the instrument gradually fills the canal to the apex using a gentle pumping action of the ultrasonic handpiece.

The fact that the operator using the ultrasonic handpiece is able to dry the canal without any apparent injury by simply running the machine at a very low power and without a coolant present is also a great advantage. The degree of dryness is significantly greater than that obtained with a cotton point or with warm air, inasmuch as the fine point can be inserted to the very apex of the canal. Another advantage of the ultrasonic endodontic technique over the conventional technique is the gentleness of the entire procedure. The patient is hardly aware of the manner in which you are working when using the ultrasonic machine. There are no vibrations, no jarring and the cutting action is smooth and gentle.

Significant time savings are routine with the ultrasonic technique. It is very evident that with the ultrasonic handpiece, the root canal can be entered, enlarged and the entire procedure completed in much less time than that required with the conventional hand instruments. In apicoectomies, in which a certain amount of bone surgery is performed, the bone chisel used in planing fashion, eliminates the use of a mallet and chisel, malletor, or bone bur in opening a window to the apex of the tooth.

The type of planing action performed by the ultrasonic bone chisel is gentle and quick and in all cases in which this technique has been used to open a window, no post-operative complications have been encountered. All cases healed uneventfully.

This is possibly the initial work of its kind using ultrasonics in root canal therapy or in bone surgery, as in apicoectomy. It definitely points a way to a new approach to securing greater control of certain endodontic procedures. Much can be done in future research to augment the use of ultrasonics in dentistry.

Journal of Dental Medicine
January 1957, Vol. 12, No. 1

EDITORIAL

Dentistry and the Hospital Relationship

The relationship of dentistry in the public general hospitals of this country continues to present many and varied difficulties and complications. It is reasonably well known that permissive legislation does not exist to permit the practice of dentistry in our public general hospitals. The fact remains, however, that almost every reasonably large hospital has a dental service and many there are indeed with the dental services on a departmental level.

Understandably, hospital administrators are concerned with this arrangement because hospital liability in the event of some unfortunate occurrence during or following treatment given by a dentist in the hospital, is a pertinent consideration.

It is our view that the majority of medical and hospital people having knowledge and concern of and for this situation are desirous of having matters regularized. But there is a small group, however, which has no wish to permit dental services in hospitals.

In this year, 1957, it seems inconceivable that two fundamental considerations are not more generally recognized. The first is that dentistry provides a necessary health service. Secondly, all dental care cannot reasonably, effectively, and indeed safely be performed in private dental offices. To us, these considerations are axiomatic and we do not intend here to present supporting arguments. If we, then, take these statements as true, obviously, in the interest of the public, some legal means must be provided to permit dental care in our public general hospitals.

In the April, 1957 issue of the New York Journal of Dentistry a previous editorial of ours was quoted as substantiating the allegation that "organized dentistry seems to be yielding its autonomy with remarkable complacency," and that "appeasement has always served as a stimulus to further encroachments."

"This precept is newly substantiated," continues the New York editorial, "by the current predicament of Canadian dentistry. There, what began as benevolent medical regulation of oral surgery in the hospital became a springboard for medical domination over the whole field of hospital dentistry." This is not quite true. Dentistry in Canada has at no time been able to provide its services in the public general hospitals under permissive legislation. This problem is not new. It has always been with us. In the past we have simply not recognized it.

In Canada, because of the stipulations contained in the British North America

Act, matters of health are in the purview of the provinces and therefore variations in hospital regulations from province to province do exist. The Ontario situation, however, is sufficiently representative to consider some of the problems and developments in that province, and their possible application on a national level.

Representations by the profession in Ontario were made to the Minister of Health and certain amendments to the Public Hospitals Act and the General Regulations made pursuant to the Act were proposed. These suggestions were referred to the Ontario Hospital Association and the Ontario Medical Association for their opinions.

During the interval it was determined that if a hospital effected local by-laws which established a dental service and the by-laws so created did not enter into conflict with existing legislation or regulations and the by-laws received assent from the Lieutenant-Governor in Council, then those by-laws would have the same effect in law as do the General Regulations made pursuant to the Act. However, in the model set of by-laws drafted by the Department of Health one section was completely unacceptable to the Hospital Dental Services Committee of the Canadian Dental Association. That is a section which relegates dentistry to a service under surgery and responsible to the chief of surgery. The strong objection of the Committee is well taken.

Dentistry is an autonomous profession. It functions, provincially, under a Dentistry Act in a similar fashion to medicine under a Medical Act. Dental students are trained under University discipline within a separate Faculty and upon graduation receive the degree of Doctor of Dental Surgery.

The dental profession recognizes areas of joint responsibility within the hospital administration in respect, particularly, to Oral Surgery, but fails to understand why areas of specific dental interest such as Operative Dentistry, Paedodontics, Orthodontics, Prosthodontics, or Periodontics should come under the oversight of a department of surgery.

It may be argued that surgery itself is divided into several distinct aspects such as orthopedic surgery, thoracic surgery, general surgery, etc., and separate departments are not established for each, but it must be remembered that all engaged in these varied pursuits are members of the same profession and all at some time or other, either as graduates or undergraduates, have been exposed to some general knowledge or training in those areas.

Dentistry, too, has several facets of concern and while the chief of a dental department may have only cursory interest in, say, orthodontics, he was required, at least as an undergraduate, to have certain basic knowledge in the field.

In our view it is fundamentally untenable to have responsibility for these areas of specific dental concern delegated to a member of another profession albeit both medicine and dentistry are vitally concerned with the total health and welfare of the patient.

The attitude of the Ontario Hospital Association to dentistry's position is relatively clear. Section VII of the Hospital by-laws in Ontario reads as follows:

> "Only a person qualified to practise medicine and registered under the provisions of the Medical Act shall be eligible to be a member of the medical staff of the hospital."

The Ontario Hospital Association has suggested that this section be altered in accordance with the following:

> "Only a person qualified to practise medicine and dentistry and registered under the provisions of the Medical Act or the Dentistry Act (of Ontario) shall be eligible to be a member of the medical staff of the hospital."

It appears to be the view of the Ontario Hospital Association "that if order is to be maintained and proper controls exercised, some provision will have to be made for integrating the dentists into the

professional staff organizations of the hospital."

The Ontario Medical Association generally offers no objection to dentistry's participation in hospital services provided that "dentistry shall be a service within the department of surgery." Further representations have been made by our profession to the O.M.A. in that regard and it is hoped that some progress has been made in supporting our view that "the dental staff shall operate as a department under the dental surgeon-in-chief with Oral Surgery under the co-direction of the dental surgeon-in-chief and the surgeon-in-chief of the department of surgery."

While technically our position in respect to the hospital relationship has not changed since one year ago, it is our view that significant progress has been made with the groups intimately concerned.

BOOK REVIEWS

The Fight For Fluoridation. Prepared by: Donald R. McNeil. Published by: Oxford University Press Inc., New York. Pages: 241. Price: $5.00.

The Fight for Fluroidation is an absorbing tale of the development of the fluoridation procedure from 1916 to 1956. It is a fascinating story. It is a terrifying story. It is fascinating because it brings into sharp relief many of the facets of mass psychology. It is terrifying because it shows to what extent human progress can be affected through ignorance and fear and through desires for self aggrandizement and notoriety. As stated by a professor of political science at Williams College in Williamstown, Massachusetts, in summing up the reasons for the violent discussions in his own community, these reasons could be found "not in our town, but in our time".

The early work of Frederick McKay in his search for the cause of mottling is chronicled in a most interesting manner. Then onto the stage stode such personalities as Black, Churchill, Dean, Cox, Arnold and Ast, each contributing to an ever expanding fund of knowledge. The first two chapters deal in a general way with the developments to which these scientists contributed, and for the first time the reader can view the dovetailing of events which led to the proposal of the adjustment of fluoride deficient waters.

What is of unusual interest now is to read of the extreme caution exercised by all scientists engaged in the study in being unwilling to recommend the fluoridation procedure until it had been proven beyond any reasonable doubt. Opponents of the measure today are constantly accusing the health professions of recommending a procedure which has had inadequate research and lacks sufficient evidence. When one reads of the great pressures to which Dean and others were subjected by almost fanatically enthusiastic proponents, and the scientifically detached manner in which statements were not made until conclusive evidence was at hand, it cannot but help increase the feelings of confidence so necessary to an acceptance of scientific verities.

The book however, is at its best when it discusses the opposition to fluoridation. Opponents often found themselves fighting side by side with individuals and organizations with which they usually had no sympathy. The anti-fluoridation movement brought together strange bed fellows. Yet their common objective, the defeat of fluoridation, held them together and made them allies in their political campaigns.

The Fight for Fluoridation is a book which should be read by every dentist. It should be read by individuals with responsibilities in their municipalities. It is a tale as a historian tells it—devoid of emotion—but gripping in its interest as the story it tells, and the significance of the story, unfolds.

Wesley J. Dunn.

The American Fluoridation Experiment. Prepared by: F. B. Exner M.D., and G. L. Waldbott, M.D. Pages: 277. Price: $3.75. Published by: Devin-Adair Co., New York.

"This is the first time (the enunciation of the fluoridation programme) that the official sponsors of a public health measure have censored, intimidated, and regimented the interested health professions. It is the first time that public health officials have deliberately falsified, distorted, and suppressed scientific evidence tending to impugn the safety of a public health measure. It is the first time that the sponsors of such a programme have systematically slandered its professions and lay critics and opponents."

This quotation, fairly effectively, establishes the emotional premises upon which this book is based. There is no question in the mind of the authors that fluoridation is socialistic, unconstitutional, and a rat poison. It hardens bones, causes sterility, produces intracranial lesions and allergies. It causes various forms of cancer and kidney disease. It is mass medication without precedent. It's regimentation, it's ineffective. It increases periodontal disease, aggravates thyroid imbalance in persons suffering from goitre and corrodes and clogs pipes. Fluoridation causes a sudden rise in mortality from diabetes, it makes teeth brittle and impossible to repair and is a sinister plot to discount the relationship of sugar to caries.

We could go on and list other 'evils' but the reader, we are sure, has seen in the popular press most of the allegations. In fact Exner and Waldbott see so many evil influences that their book loses any possible effectiveness, at least on a professional level, because there is an insufficient number of readers so naive. For anyone who knows anything about fluoridation and has training in the scientific discipline, the book condemns itself as blatant and emotional propaganda.

Canada was mentioned in two major contexts. It is interesting to see how accurately. The allegation was made that positive evidence exists that fluorine increases the incidence of both gingivitis and pyorrhea. As support for this contention an article by Dr. Keith Box in the February 1955 issue of the Journal of the Ontario Dental Association was quoted:

"Dr. Keith Box pointed out that in the town of Stratford which has been using natural fluoride water for 37 years at 1.6 parts per million, 79.2 per cent of the children were found to have gingivitis, about the same as in the artificially fluoridated city of Brantford and the fluorine-free city of Sarnia."

We have read that sentence several times and how it gives support to the above contention remains beyond the scope of our mental resources to understand. However that sentence, in respect to its mystifying propensities, is not at all unique in this text.

The people of the city of Toronto will be pleased to note that they have been raised to provincial status and have a Court of Appeal of their own. The statement was made that the "Toronto" Court of Appeal declared invalid the by-law adopted by the Metropolitan Toronto Council and that this decision was expected to halt fluoridation programmes in nine other communities. It didn't.

We hesitate to use the term 'journalistic refuse' but nothing else seems to describe this book as well.

Wesley J. Dunn.

Pediatric Dentistry. Prepared by: M. Michael Cohen, D.M.D. Published by: The C. V. Mosby Co. Pages 589 with 395 illustrations including 9 in colour. Price: $14.75.

This book is a compilation of the efforts of many leaders in our profession, aided by other worthy contributions of outstanding individuals in allied professions. There have been numerous other volumes written under this general heading but by comparison some previous texts seem at least partially eclipsed in their worthiness. Perhaps this is in part, a result of the size of this text which by volume alone permits it to delve unstintingly into the many phases of pediatric dentistry. Even a brief discussion of each chapter would involve too much space but certain ones by virtue of their excellence demand brief mention.

Chapter one reasonably enough deals lucidly with the Embryological Development of Head, Face, Oral Cavity. Through the extensive use of diagrams and colour plates this complex subject takes on a new simplicity. Harry Sicher M.D. prepared this material for ready understanding. Chapter two by Marshall B. Kreidburg A.B. M.D. and James Marion Baty A.B. M.D., covers the Physical Growth and Development of the Child under ap-

proximately twenty-five sections. Although these sections are often only highlighted, enough is said in a few well chosen words that little of the essence is left unmentioned. Nutrition of the Fetus and Growth of the Body as a Whole are two such sections. In this chapter is a tooth eruption chart which would seem to be very useful. Chapter three by Allen G. Brodie D.D.S. Ph.D. is entitled Craniometry and Cephalometry as applied to the Growing Child. Once more this master of his subject although given only twenty-six pages manages to cover the technique with the use of several excellent plates and then takes the reader through the Utilization of Head Films on into the Utilization of the Tracings and a Technique for the Study of Individual Parts. Chapter four by Eleanor Pavenstedt M.D. is entitled Psychological Development of the Child. If only one chapter were to receive mention this most assuredly would be the one. Under the headings Prenatal Period, Birth and Neonatal Period, Infancy, the Toddler, the Preschool Child, the Latency Period, and Adolescence, the author furnishes the reader with intelligent but concise detail. Anyone reading this chapter will be left with a feeling of grateful respect. Chapters five, six, seven and eight cover Development and Growth of Teeth and Jaws, anatomy of Primary Teeth, Nutrition and Oral Health, and Dental Caries. Author Cohen contributes eminently in chapters 9, 10, 12, 13, 14, 15 and 16 covering the following subjects: Operative Dentistry, The Handicapped Child (Dental Treatment for the Handicapped Child and-Cleft Lip and Cleft Palate), Prophylactic Orthodontics and Tooth Guidance, Oral Manifestation of Systemic Disease, the Endocrine Glands in Dental Dentofacial and Craniofacial Development, Factors Which Influence the Growth and Development of the Dental-Dentofacial-Craniofacial Complex, and Periodontal Disturbances in Childhood. Each of these chapters is presented with the idea in mind of teaching the reader and stimulating his memory and his desire for further reading.

Throughout the entire volume the reader is constantly delighted with the readership value of this immensely helpful book. It has been produced by Dr. Cohen and his co-workers in such a way that one is drawn to its pages through interest alone. However when specific information is sought the pages of this volume will seldom fail to reveal the answers.

E. R. Bilkey.

Surgery For Dental Students. Prepared by: Michael F. A. Woodruff, M.D., M.S., (Melb.), F.R.C.S. (Eng.). Published by: The Ryerson Press, Toronto. Pages: 326. Price: $7.75.

In Professor Woodruff's textbook of Surgery for Dental Students, both student and clinician will find a safe and sound assistance in surgical problems. A familiarity with this text enriches the student, and establishes for him a basic approach to surgery which ensures for him reliable procedures in the diagnosis and treatment of surgical lesions.

Some may consider the text to be too elementary with insufficient detail regarding the more commonly encountered conditions. This brevity, however, enables the author to preserve and to repeat the principles of his approach to the subject. It is impossible for a beginner to go wrong if he has had the opportunity to become familiar with the text. It should be an excellent addition to the prescribed study texts for nurses in training. Details must be learned from other sources.

It is popular today to consider the necessity of training dental surgeons, nurses and medical students in the principles of the emergency handling of mass casualties. The text under review might be a suitable medium for this instruction.

It is hoped that in a subsequent edition of this excellent and refreshing book, the author might deal with the surgical aspects of the adrenocortical steroids. The time is opportune to consider also the harmful effects from indiscriminate use of the antibiotic drugs.

J. A. Noble.

Teeth, Health and Appearance. Prepared by: American Dental Association. Available from: Order Dept., American Dental Assoc., 222 East Superior Street, Chicago 11, Illinois. Pages: 48. Price: $3.50.

Teeth, Health and Appearance is a forty-seven page, well-illustrated book, prepared by the American Dental Association. Use is made of a good deal of the best material of the past years.

The book, which is dedicated to the purpose of showing how proper dental care can be accomplished and to the emphasizing of "Preventive Dentistry" is a very good one indeed.

Further pictures and explanation point out the effect on appearance of poor teeth and good teeth

in the different age groups from early childhood to adult life. The hazards to general health from infected teeth, both in a child and adult, are stressed as well as the possibility of psychological effects of the child during the formative years.

The value of early visits to the Dentist is stressed so that the health of the child may be protected. It explains the value of x-raying the deciduous teeth to show early defects and mentions the necessity of placing space maintainers when deciduous teeth are prematurely lost. The importance of the deciduous teeth is made clear.

The chapter on irregular teeth with accompanying profile pictures and photographs of casts is sufficiently dramatic to catch the eye of most parents and thus arouse their interest in what the cause of these irregularities may be, i.e. habits, premature loss of teeth, inheritance, etc.

A chapter on the care of the permanent teeth is well-illustrated with coloured diagrams showing not only mouths that are well-cared for, but also mouths that exhibit the devastating effects of poor care.

The process of dental decay is explained in a manner that will be understandable to the laity. Diseases of the gums and supporting tissues are dealt with in an equally lucid way.

Suggestions as to well-balanced diets are given and here again excellent coloured pictures enhance the value of this chapter.

The need for taking x-rays and their value in Dentistry is stressed. The pictures of x-ray films reproduced in the book strengthens the recommendations made that x-rays should be taken at regular periods.

The final chapter deals with the wearing of artificial teeth or dentures and gives some advice to wearers of dentures that would appear to be sound and useful. It points out, that, "Even though dentures fit accurately, feel comfortable and are good looking, they are never so efficient as a healthy set of natural teeth. Nevertheless, properly constructed dentures will serve in no small measure to replace them."

In conclusion, may I say that it is evident that a great deal of thought and effort have gone into the production of "Teeth, Health and Appearance". I feel that it would be a valuable addition to the library of any dental office as an effective means of patient education.

M. G. Boyes

THE LIBRARY

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

AMERICAN DENTAL ASSOCIATION: Teeth, health, and appearance. 4th ed. 1957. 47 p. illus.

ADRIANI, J.: Techniques and procedures of anesthesia. 2nd ed. 1956. 568 p. illus.

BRASH, J. C.: The aetiology of irregularity and malocclusion of the teeth. 2nd ed. 1956. 503 p. illus.

BREGSTEIN, S. J.: Interviewing, counseling, and managing dental patients. 1957. 310 p.

EXNER, F. B., and WALDBOTT, G. L.: The American fluoridation experiment. 1957. 277 p.

HOLDSWORTH, W. G.: Cleft lip and palate. 2nd ed. 1957. 187 p. illus.

McCALL, J. O., and WALD, S. S.: Clinical dental roentgenology. 4th ed. 1957. 466 p. illus.

McNEIL, D. R.: The fight for fluoridation. 1957. 241 p.

MERCK & CO. LTD.: The Merck manual of diagnosis and therapy. 9th ed. 1956. 1870 p. illus.

STOLL, F. A.: Dental health education. 1957. 196 p. illus.

ECONOMIC SECURITY

The Nature of Inflation

E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist

The growth of interdependency and complexity in the economies of modern states has necessitated an ever increasing degree of intervention by government to maintain a working balance between the various factors. The need for such governmental intervention in greater or lesser degree, in one direction or another, now is accepted by every political party.

In the period in which the economy of a nation was determined solely by the free operation of supply and demand in the marketplace, it was impossible for any one individual or even any group within one nation to have any appreciable effect upon the economy. But with the development of the theory and practice of governmental intervention to "manage" the economy has come the corollary: the opportunity — indeed duty — of every citizen to exert his influence in shaping the economy of the nation.

"Democracy is a system of government in which the vast majority take a continuous and active interest in the affairs of government and are able effectively to exercise their will through their elected representatives." Amongst none is it more important than that the nation's professional men should inform themselves and exert their informed opinion. Amongst the economic problems to which such attention appropriately might be directed is that of the inflation which has arisen with renewed seriousness in the last year.

"Inflation" is the increase in the money price of goods and services without corresponding increase in their quality or serviceability. "Deflation" is, of course, the reverse process. To indicate the process whereby such changes take place, it is necessary briefly to outline the relationship of money, prices, goods and services:

> "Money is any claim on actual, legal tender which will be accepted in payment for goods and services."

In an earlier day, the only "money" was physical coins, preferably gold, but often silver. From this developed claims on gold coin in the form of credits; then, paper currency which could be exchanged for gold coin on demand (the issuers literally banking on the fact that all the paper notes would not be presented at any one time); finally, paper currency, issued without reference to metallic reserves, and supporting an even larger volume of book-entry credits. It will be noted that each successive stage has greatly increased the volume or supply of "money" to which people obtain access in one way or another. "Money Supply" today means physical currency in circulation, plus bank deposits, plus bank loans and credits, plus commercial credit (financing, installment buying, charge accounts) multiplied by the "velocity of money" or the rate at which it is turned over in spending.

> "Price" is the money value attached to all goods and services available at any one time, or the average money value over a given period of time.

Whilst "price" usually is thought of as the money required to buy a specific article or service: 'five loaves of broad are worth a dollar'; it also is possible to turn

it around and say, 'a dollar is worth five loaves of bread'.

> "Goods and Services", in the economic sense, are all goods and services offered for sale and exchanged for money.

Such a definition excludes, of course, all goods made or services performed for oneself or transferred without payment for altruistic reasons.

It will be obvious that at any one moment there is a state of balance between these factors. Where M=the supply of money, V=the velocity at which money is being turned over, P=the price of 'things in general', and T=total volume of goods and services, the following equation expresses that balance:

$$MV=PT$$

When the money supply (M) or the velocity (V) at which it is spent increases more rapidly that the total supply (T) of goods and services, it is a matter of the simplest arithmetic that prices (P) will increase to maintain the balance. This is "Inflation".

In the next article we shall examine the evidence concerning the sharp increase in Canada of money supply over the last year and some of the reasons for it; also the significance and consequences of this trend if it continues.

GENERAL NEWS

A.D.A. and N.A.D.L. Agree to Develop Certification Program

Development of a certification program for dental laboratory technicians with educational standards to be established by the A.D.A. in consultation with the National Association of Dental Laboratories was agreed on at a second conference of representatives of the two organizations March 9 at the Hotel Statler in Washington. Dr. Harry Lyons, A.D.A. president, headed the group of 11 representatives of the A.D.A. Mr. Nathan Cooper, president of the N.A.-D.L., presided. On Feb. 3, officials of the two groups held a preliminary meeting in Chicago.

Fluoridation now Reaches 1,506 Communities

Fluoridation of public water supplies has exceeded the 1,500-mark for communities. The procedure was in operation in 1,506 communities with a combined population of 31,566,653 as of May 1, according to the U.S. Public Health Service. In Sheboygan, Wis., the health department, reporting on the conclusion of a 10-year fluoridation test period, said an average reduction of about 50 per cent in dental disease was found among children from kindergarten to ninth grade as compared with children of the same age group before the program was started on February 25, 1946.

Sheboygan Reports

A reduction of about 50 per cent in dental problems during a ten-year test of water fluoridation was reported on May 1st by Dr. F. A. Nause of the Sheboygan department of health.

This report — one of the milestones in the nation's study of the benefits of fluoridation in reducing dental problems — covers the period originally set up by the U.S. Public Health Service.

Success has been so good, said Dr. A. H. Finke, city dentist, that Sheboygan is continuing to fluoridate its water after conclusion of the ten-year test period.

Sheboygan draws its water from Lake Michigan. Fluoridation has been carried out by the city water department under the direction of Superintendent J. C. Zufelt.

Results of the study show that while the average kindergarten child had 4.8 decayed, missing or filled teeth in 1945, before the fluoridation program began, the average in 1956 for children of this age was only 1.96. Among children who were three, four or five years old when the program began — now in seventh, eighth and ninth grades — in 1945 had an average of 8.54 decayed, missing or filled teeth, while today they have only 4.74 such teeth.

Where in 1945 only one in five children of kindergarten age had no cavities, in 1956 about half — 48.6 per cent — had none. Similar improvements were found in other age brackets.

THE CORPS

Brigadier E. M. Wansbrough inspected No. 12 Dental Company during early June. This unit, whose headquarters is located in H.M.C.S. "Stadacona", the Naval Atlantic Coast Command Base at Halifax, N.S., has a wide spread commitment which embraces the four Maritime Provinces, including the rapidly expanding Army Training Camp at Gagetown, N.B. It is commanded by Colonel H. L. Harris who arranged the inspection itinerary to include a visit to No. 50 Dental Unit (Militia) at Halifax and attendance at the Maritime Dental Association Annual Meeting at Moncton, N.B., on June 11th.

The RCDC School has moved to Camp Borden, Ont., from the old Mines Building in Ottawa, where it has been functioning since its inception in the summer of 1947. This new accommodation is the finest and most up to date in the camp. It was carefully planned to meet the full training requirements of the Corps and will also provide the RCDC with a "Corps Home" where those historical and tradition-establishing elements of service life so essential to "esprit de Corps", can be housed and maintained.

Lt.-Col. B. P. Kearney has been appointed Commandant, The RCDC School, to succeed Lt.-Col. I. A. L. Millar who has held that appointment since June 1953. Lt.-Col. Millar's new duties have not yet been announced by Army Headquarters. Lt.-Col. Kearney who is a graduate of Toronto University, has served continuously in the Corps since his appointment in 1940. He was in command of the Korean Dental Unit during 1953-54.

Army Headquarters has announced the promotion of Captain D. H. Skinner to the rank of Major. Major Skinner, who is currently employed at Camp Borden clinic, hails originally from London, England, but his family emigrated to Toronto where he received his education including his dental degree. On completion of senior matriculation he served as a Flying Officer with the RCAF which included service overseas from June 1944 until the end of the war. He entered the RCDC immediately upon graduation in 1951 and his service with the Corps has included a period in the Far East during the Korean War.

Brigadier E. M. Wansbrough attended the Annual Convention of the C.D.A. and the meetings of the Board of Governors which preceded the annual sessions. Lt.-Col. E. C. Purdy, who commands No. 14 Dental Company with headquarters in Winnipeg, was also in attendance at the convention while several dental officers employed at conveniently located clinics, attended for varying portions of the general meeting.

Fourteen recent graduates have joined the Corps. Their names and the universities from which they graduated are given below:

From the University of Alberta:
- L. A. Campbell
- J. A. Haws
- V. A. Low
- H. J. Sandham

From the University of Toronto:
- H. F. MacKay

From McGill University:
- G. J. Boucher
- F. C. Buschlen

From the University of Montreal:
- J. L. Bertrand
- A. Pare

From Dalhousie University:
- J. S. Davis
- J. F. Eadon
- J. E. MacNeilly
- L. A. Reynolds

Captain I. W. Susser who served in the RCDC from graduation in 1952 until his voluntary release in June 1955 has recently been re-appointed to the Corps. He is currently employed with No. 14 Dental Company, Prairie Command.

Three short-service dental officers have been retired from the Canadian Army (Regular) during June, namely, Captains L. A. Dutkowski, J. P. Mergl and P. Veilleux. The two first named had served most recently in the clinics at Portage la Prairie and Fort Churchill, respectively, while Captain Veilleux had been employed in Quebec Command.

Captain B. J. H. Marchant, RCDC Quartermaster, has recently been promoted to the rank of Major and appointed to command No. 1 Dental Equipment Depot in Ottawa. Major Marchant commenced his service career with the Corps in November 1939 and has had a wide and varied continuous experience in his field which makes him well qualified for his new appointment.

THE PROVINCES

Alberta

Alberta Dental Association

Dr. R. B. Campbell, Edmonton, was elected president of the Alberta Dental Association at the annual meeting held in Calgary. Dr. Campbell has been on the board of the association for four years. In 1956 he was chairman of the dental health committee.

In stating a policy supporting the fluoridation of water supplies, Dr. E. Upton, past president, told the meeting the dental association has a responsibility of presenting the true facts on fluoridation and voting accordingly when plebiscites are held.

Following a discussion on fluoridation as a dental health measure, the association allocated money for educational programmes in the districts where these plebiscites will be held in Alberta.

The board was informed that the graduation class of 1950 is setting up a scholarship for a third year student. The scholarship fund, which will be perpetual, was aided by every member of the class.

The following is a list of the present officers and Board of Directors of the Association, together with a list of committee chairmen and members where named:

Board of Directors: R. B. Campbell, President; L. K. Brooks, Vice-President; A. R. S. Gray; O. L. Oatway; M. M. Woronuk; G. C. Swan; V. M. Lloyd.

Secretary-Treasurer, Registrar: R. A. Rooney.

Finance Committee: E. R. Upton, R. B. Campbell, L. K. Brooks.

Health Insurance Studies: A. C. Ahrens, H. Baden Powell.

Public Relations: J. M. Calvert, with committee members appointed from local Societies.

Scholarship Committee: H. R. MacLean.

Pacific Coast Conference: J. Zimmerman, Councillor.

Benevolence Fund: O. L. Oatway, E. R. Upton.

University Liaison Committee: John W. Clay, J. Zimmerman.

Legislation Committee: J. Zimmerman, A. C. Steeves, John W. Clay.

Dentists' Advisory Council: L. T. Allen, President, John W. Clay, Vice-President, W. H. Scott, Secretary-Treasurer, Faust Gowda, R. B. Campbell, C. D. Husband, H. L. Freeland.

Mediation Committee: Edmonton—W. S. Murray, C. E. Eastwood; Central—S. Fleming, S. R. Adam; Calgary—H. L. Freeland, M. J. Lipkind, C. S. Lea; Southern—H. D. Redding, W. P. Craig.

Public Dental Health: G. C. Swann, with added members.

Clinics Committee: A. R. S. Gray, with added members.

Discipline Committee: L. T. Allen, Chairman; T. F. Macdonald, A. M. Revell, G. E. Decker, H. L. Freeland, H. B. Powell, W M. Blair, O. L. Oatway.

Dental Health Week: W. A. Nixon, Chairman.

General Stewart Honoured in Edmonton

About 70 Edmonton and District Dental Society members and out-of-town guests gathered at the Seven Seas restaurant on May 15th, to pay tribute to Gen. John Smith Stewart of Lethbridge, pioneer dentist, former MLA and MP, and pioneer district teacher who is practising dentistry eight or nine hours a day at the age of 80.

On May 17th, in convocation ceremony at the Northern Alberta Jubilee Auditorium, the University of Alberta conferred an honorary doctor of laws degree on Gen. Stewart. To mark that event, the Edmonton and District Dental Society presented General Stewart with a scarlet and white honorary doctor's gown, a hood, and mortar.

In addition General Stewart was accorded a life membership in the local group.

It was announced that Dr. R. V. Blackmore, treasurer of the local society, has been granted a three-year fellowship for studies at Rochester leading to a Ph.D. degree in micro-biology.

During the evening too, Dr. E. Upton, past-president of the Alberta Dental Society, received a plaque from the local group "for all the work you did on our behalf in the past year."

Dr. S. Gordon Geldart, president-elect of the local group, was programme chairman, while General Stewart was introduced by Dr. Art Rooney, secretary of the provincial group.

Other head table guests included: Dr. Max Lipkind, president of the Calgary society; Dr. Arnold Lane, past-president of the Edmonton Society; Dr. W. Scott Hamilton, dean of the Faculty of Dentistry at the University; Dr. Bus Haryett, secretary of the city group; Dr. Bruce McKenzie, treasurer of the local group and Dr. Victor Lloyd, a member of the Alberta Board.

DR. J. S. STEWART RECEIVES LL.D. (Honoris Causa).

Dean W. Scott Hamilton presenting Dr. Stewart to Chancellor.

General Stewart received LL.D. (Honoris Causa) from Alberta

On Friday, May 17th, Dr. John S. Stewart of Lethbridge, Alberta, received the degree of Doctor of Laws (Honoris Causa) from the University of Alberta. He was presented to the Chancellor in the following words by Dr. W. Scott Hamilton, Dean of the Faculty of Dentistry.

"Eminent Chancellor, I have the honour to present a distinguished Canadian citizen, John Smith Stewart of Lethbridge.

Dr. Stewart was born at Brampton, Ontario. While a very young man he moved to Edmonton in the year 1896, and has been an Alberta resident since that time. Shortly after his arrival, he registered in the first Normal School in what was later to become the Province of Alberta, following which he taught school for a time at Namao Cross Roads, immediately north of Edmonton. In 1899 he became interested in Dentistry and graduated from Toronto in 1903, and since that time has been a resident of Lethbridge.

The record of his life indicates that during times of peace, he contributed to the building of our country. On the other hand, in spite of his mild disposition and charming personality, he was just as ready to fight in the defence of those principles under which free men live and democracy flourishes. This is illustrated by an account of his career as a highly ethical practitioner of his profession, as a statesman, a loyal citizen and a great military leader.

In 1911 he was first elected to the Legislative Assembly of Alberta, where he served for fourteen years. In 1930 he went to the Canadian House of Commons for a period of four years.

Dr. Stewart has also had a long and distinguished military career. He first enlisted, with the original Lord Strathcona Horse, in 1899 and served in the South African War, where he was decorated with the Queen's medal with bars. And then we find him attending the Royal Military College in Kingston during 1907 and 1908, at which time he was gazetted Major, Officer Commanding the 25th Battery, Canadian Field Artillery.

On the outbreak of hostilities in 1914, he joined the Canadian Expeditionary Force, was promoted to Lieutenant-Colonel, and went overseas in 1915, as officer commanding the seventh Artillery Brigade. In 1917 he was promoted to Brigadier-General, in command of the third division, Canadian

Artillery. He led his division through all the engagements in which the Canadian Corps participated.

The famous battle of Vimy Ridge is recorded in history as one of the greatest engagements of all times, partly because its capture broke the spirit of the enemy, and established the turning point in the war. This stronghold, which the enemy thought to be secure, had been successfully defended many times. However, it fell within a few hours, with the Canadian Corps in the central offensive position. The success of this battle was due largely to the strategy employed and the detailed preparation to which our general made an important contribution. Not being satisfied at merely driving them from the Ridge, he had the enemy's guns turned around and fired into the plains beyond, further confusing their retreat.

Eminent Chancellor, this convocation may be interested in knowing that the two representatives of the university, most directly connected with this present ceremony, were, in those days, known as Gunner Scarlett and Gunner Hamilton. This may be unique, but in any case it is appropriate, on this the fortieth anniversary of that famous engagement, that this institution, in the province where he has lived for so many years, should honour a great military leader at the first convocation to be held in this beautiful jubilee auditorium.

General Stewart was wounded on two occasions and was decorated with the Distinguished Service Order, the Croix de Guerre, and in 1918 was made Companion of the Order of St. Michael and St. George, at the hands of King George V.

Through the religious, fraternal and civic agencies of his community, he practises that greatest of all virtues, charity, in all its phases, and in a quiet and eminent manner.

A modern school, which was recently opened in Lethbridge, bears the name of the General Stewart School.

If Kipling were present today, he could witness the fulfilment of a life patterned after that which he formulated, for a young man, and which he expressed in a well-known poem, part of which is as follows:—

If you can talk with crowds and keep your virtue,
Or walk with kings — nor lose the common touch,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much,
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And — which is more — you'll be a Man, my son!

Eminent Chancellor, I have the honour to present John Smith Stewart for the degree of Doctor of Laws, Honoris Causa."

Peace River Dental Society

The Peace River Dental Society held its annual meeting in the Park Hotel on May 4th.

Present were Dr. and Mrs. Don Brodin of Dawson Creek, B.C.; Dr. and Mrs. Crowell, Dr. and Mrs. C. M. Compton, Dr. and Mrs. D. Carroll, Dr. J. Higa of Grande Prairie; Dr. G. L. McMurray of Beaverlodge; Dr. M. M. Woroniul of Fairview; Dr. and Mrs. Leo Lyman of High Prairie; Dr. and Mrs. Boyko, of Peace River.

A new executive was elected as follows: president, Dr. Compton, vice-president, Dr. Boyko.

Secretary-treasurer, Dr. Crowell, and directors, Dr. Carroll and Dr. Luman.

Following the meeting and banquet the dentists and their wives were entertained at the home of Dr. and Mrs. Lyman.

Edmonton and District Dental Society

Five members of the Edmonton and District Dental Society received honorary life memberships recently. The five, each of whom has been in practice for more than forty years, are Drs. M. M. Dunsworth, R. McCormack, C. H. Lipsey, L. D. McLaurin, and W. H. Scott.

Dr. Dunsworth was born in Illinois, attended high school in Lethbridge, and graduated from the school of dentistry at Northwestern University. He began practice in Edmonton in 1917. Captain of the western champion Edmonton Eskimos of 1924, Dr. Dunsworth shares a dental office with a son.

Dr. McCormack graduated from the Royal College of Dental Surgeons in 1917. He practised in Edmonton for 30 years, and was associated with the Edmonton Public School Board. He is dental director of the Edmonton school health services.

Dr. Lipsey was a graduate of Dentistry from the University of Toronto at the age of 21, and began practice in Edmonton in 1920. He saw service as a dentist overseas during the First World War and is a fisherman, hunter and gardener.

Dr. McLaurin is a graduate of pharmacy, University of Montreal, and of dentistry at the University of Toronto in 1917. He was a member of the dental corps during the First World War and practised in Edmonton since discharge in 1919.

Dr. Scott attended the University of Alberta and graduated in dentistry in 1916 from Toronto. He practised in Vermilion from 1918 to 1942 when he joined the army

dental corps. Since 1948 Dr. Scott has been resident dentist at Oliver Mental Institute. He has trained and judged horses throughout western Canada.

Officers elected at the meeting are Dr. S. G. Geldart, President; Dr. R. Stuart, vice-president; Dr. B. Hayett, secretary; Dr. B. MacKenzie, treasurer; Dr. S. Gerolamy, social convener, and Drs. A. Lane, M. Shields and M. Steen, directors.

Dr. R. C. Sills announced that the society is ready to provide speakers to give the public information before the coming fluoridation plebiscite.

G. C.

British Columbia

B.C. Dental Association — Annual Convention

Over 200 dentists hailing from the four corners of the province, more than half chaperoned by their wives, attended the 41st Annual Convention of the B.C. Dental Association in the beautiful Empress Hotel in Victoria. The weather was propitious and for three days there was an interesting round of study, relaxation and enjoyment.

At the outset Dr. W. B. Milburn, the President, made a fitting speech of welcome, which was followed by an address by the Honorable Robert Bonner, Attorney General of B.C., who brought greetings from the provincial government.

The two featured essayists were Dr. Sol Silverman, Jr., and Capt. T. Lesney. Dr. Silverman's subject was "Dental Medicine in Everyday Practice", and he stressed systemic treatment of mouth lesions before local treatment, with history and laboratory tests taken first. Dr. Lesney dealt with oral surgery under the topics neoplasms, syncope, and antibiotics and tranquillizers. Both men received attentive hearings and the Georgian Lounge was frequently taxed to capacity.

Over fifty veteran dental officers turned out to the R.C.D.C. Luncheon in the Flamingo Room, Crystal Gardens. Lt.-Col. Fraser Allen reminisced about old times in the army, and Major Cal Foote in his remarks recalled the late Major Bill Gibson who taught at the Dental Corps School in Toronto.

At the Banquet in the Crystal Ballroom the Mayor of Victoria welcomed the convention to the Capital City, and Dr. Milburn introduced the dignitaries seated at the head table. A novel form of entertainment was provided by the Oak Bay Hand Bell Ringers, whose generous renditions were heard with appreciation. Dr. Gordon Shrum, Dean of the Faculty of Graduate Studies of U.B.C., was the post-prandial speaker. His address on "Science and the Modern World" was a learned display of facts sprinkled with a delicious sparkle of humor.

The President's Reception and Dance was a successful affair with an overflow from the Crystal Ballroom into the Palm Room. Here again there was local talent for entertainment: Several brawny Victoria dentists arrayed in feminine finery of bygone days paraded in a style show which evoked rollicking applause.

Two important business sessions were held on Friday afternoon: the Annual Meeting of the College of Dental Surgeons of B.C. was presided over by Dr. Wm. Miller; the Annual Meeting of the Dentists' Legal Protective Association was conducted by Dr. Jack Dohan.

On the last morning 17 fine table clinics, given by dentists from B.C. and Washington State, embraced most phases of dental practice.

To assure a good attendance at the booths of the fifteen commercial exhibitors, prizes valued at $100 were drawn by those who had cards bearing all the exhibitors' signatures. The fortunate winners were Drs. Dave Parfitt and Lloyd English.

The luncheon of the B.C. Dental Association in the Empress Dining Room preceded the Annual Business Meeting of the Association.

Two senior members of the dental profession, Drs. Percy Thomas and Frank O'Neil, were named to membership in the 75-50-25 Club (75 years of age, in practice for 50 years, 25 in B.C.).

Reports of officers and of committee chairmen were given. The membership convener announced a paid-up membership of 481. Health insurance studies called forth considerable discussion.

In control during the next season is this new slate of officers:

President: Dr. L. W. Beamish.

President-Elect: Dr. W. P. Munsie.

Secretary: Dr. I. U. MacIntosh.

Treasurer: Dr. Max Nacht.

Directors: Drs. K. J. P. Tawse, M. J. Waterman, H. L. Coursier, J. M. McDougall, T. W. James, E. E. Kellen.

Dr. Keith Lindsay was appointed representative on the Cancer Institute. Dr. George Darts, Councillor to the Pacific Coast Dental Conference in San Diego, urged attendance at this outstanding meeting, August 19-22.

Before terminating the convention Dr.

Milburn introduced the incoming president, Dr. L. W. Beamish, who spoke briefly.

A successful golf tournament was carried on during Thursday and Friday. Victoria Golf Links by the sea was an excellent challenge for the fifty-odd players who managed to find time to play the ancient sport. Thirty completed cards were turned in to the Golf Committee. Low gross honors went to Dr. Gordon Booth of Vancouver who turned in a fine 78 score. The low net went to Dr. T. McCusker of Vancouver who carded a net 65 score. For the golfers with 24 handicap and above, the low gross prize was won by Dr. L. B. Alexander from Haney with an even 90 score, while Victorian Dr. H. C. Gill took low net honours with an excellent 66 net score.

D. H. M.

New Brunswick

Saint John Dental Society

Members of the Saint John Dental Society and their ladies attended the "annual get-together" in the Admiral Beatty Hotel recently, when some 40 persons were present.

Previous to this function, Dr. G. L. Ramsay, Saint John was elected president, succeeding Dr. Ernest D. Halford. Other newly elected officers are Dr. J. G. Blackmer, vice-president; Dr. Leo A. Cormier, treasurer; and Dr. Arthur Steuerman, secretary.

Past-president Halford welcomed those in attendance at the opening of this gathering.

J. F. E.

Nova Scotia

Dr. K. M. Kerr Appointed to Faculty Staff

Dr. A. E. Kerr, President of Dalhousie University has announced the appointment of Dr. Kenneth MacFarlane Kerr to the full time teaching staff of the Faculty of Dentistry. Born in Peterborough, Ontario, Dr. Kerr moved at an early age with his family to Moncton, New Brunswick, where he completed his early schooling. Following a year of study at Mount Allison University in 1932, Dr. Kerr began a business career. At the outbreak of the Second World War he enlisted in the Canadian Army and served five years overseas. On his return to Canada in 1945 Dr. Kerr entered Dalhousie University and graduated with a fine record from the Faculty of Dentistry in 1950. Since that time he has been engaged successfully in private practice at Bedford, Nova Scotia, and in addition he has been on the part time teaching staff of the Faculty of Dentistry.

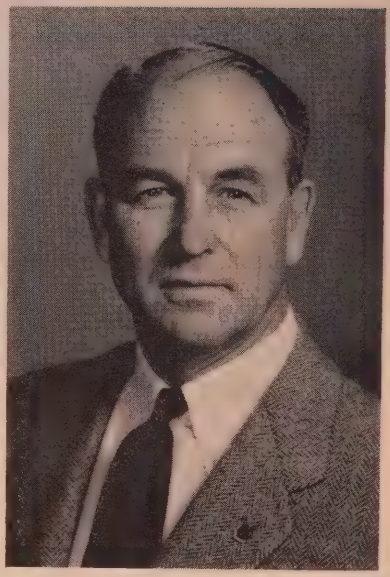

photo by Dodge

DR. K. M. KERR,

Assistant Professor Prosthodontics, Dalhousie University

In 1938 Dr. Kerr married Elizabeth Catherine, daughter of Mrs. Cunningham and the late Dr. Alan R. Cunningham of Halifax. They have three sons.

Dr. Kerr has been appointed Assistant Professor of Prosthetic Dentistry and has been granted a year's leave of absence for post graduate study in the United States.

The Research Committee of the Canadian Dental Association recently announced the award of a Studentship Grant to Dr. Kerr for a period of study at the Ohio State University, commencing next September.

Dr. Kerr expressed great pleasure at this further step in the development and expansion of the teaching program of the Faculty of Dentistry.

H. M. E.

Ontario

Dr. Mitton Elected O.P.H.A. President

Dr. Glenn T. Mitton is professor and head of the Department of Dental Public Health at the Faculty of Dentistry, University of Toronto and Field Secretary for the Dental Public Health Committee of the Ontario Dental Association.

At the recent Annual Meeting of the Ontario Public Health Association held jointly with the Canadian Public Health Association in the King Edward Sheraton Hotel, Dr. Mitton was elected president of the Ontario Public Health Association. The 1957-58 officers are: Imm. Past President — Dr. D. F. Damude — now with The World Health Organization; president — Dr. Glenn T. Mitton; first vice-president — Dr. L. A. Clarke, M.O.H., City of Hamilton, Ontario; second vice-president — appointee of Public Health Nursing Section; secretary-treasurer — Dr. R. B. Sutherland, Division of Industrial Hygiene, Province of Ontario; director-at-large — Dr. C. A. Harris, M.O.H., City of London, Ontario.

Section Representatives: Health officers: Dr. A. F. Bull, M.O.H., Halton County Health Unit. Public Health Nurses: Miss B. Fletcher, Department of Health, City of Toronto; Dental Public Health: Dr. F. H. Compton, Director of Dental Services, City of Toronto; Veterinary Public Health: Dr. A. B. Hall, Public Health Veterinarian, City of London; Environmental Hygiene: Mr. W. Marsen, Dept. of Health, City of Toronto; Plumbing Inspector: Mr. W. M. Prentice, Toronto.

Dr. Mitton has been connected with this Association since 1948 when he completed a post graduate course in Public Health. He worked toward the establishment of Dental Public Health sections in both the Canadian and Ontario Associations and saw that accomplished at the joint meeting of the two associations in Toronto in June 1950. Each year since its formation the Dental Public Health Section has provided very helpful Section programmes as well as dental health speakers at luncheons and general sessions of the Association.

Dr. Mitton was asked to represent the Dental Public Health Section and accept nomination for election to the Board of Governors. He was elected 2nd vice-president in 1956 and during that year was chairman of the convention programme committee. His election to the presidency this year marks the first occasion that Dentistry has been so honoured in the Ontario Public Health Association.

W. J. D.

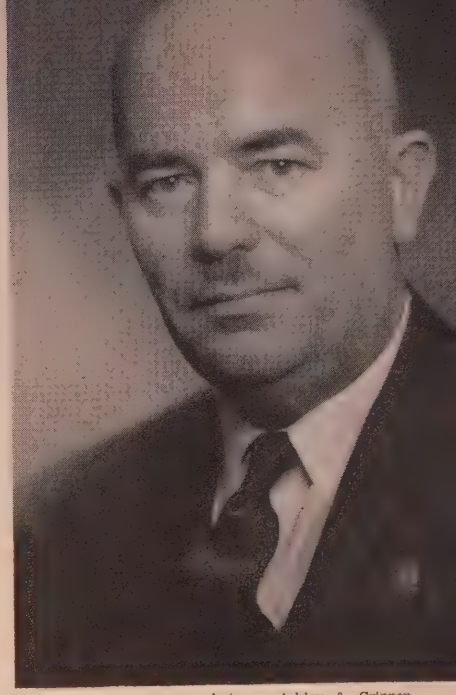

photo — Ashley & Crippen

GLENN T. MITTON, D.D.S. D.D.P.H., President, Ontario Public Health Association

Renfrew County Dental

The regular meeting of the Renfrew County Dental was held recently at the Renfrew Hotel. Dr. E. E. Johns, Kingston, was the clinician during the afternoon session.

His illustrated lecture outlined various new techniques which dentists could employ in the prevention of malocclusions. He stressed the point that many cases of badly aligned teeth could be counteracted in their incipient stages by the general practitioner in order to prevent prolonged treatment by the specialist in later years.

At the close of the clinic the members adjourned to the office of Dr. L. Ringrose where the practical application of Dr. Johns' suggestions were demonstrated on several of the child patients.

The dinner meeting was held at 5.30 with the president, Dr. J. R. Lamping, in the chair. There were 12 members present, representing Renfrew, Pembroke, Eganville, Arnprior, Cobden and Deep River. At the close of the business meeting the president introduced the speaker, Dr. Johns. During his address, Dr. Johns outlined some of the work being done by the public relations committee, of which he is a member. He

stressed the fact that the individual dentist should take time to promote and maintain a high standard of good public relations between the dental profession and the public, whom they serve. He also urged all members who could possibly be there, to attend the annual convention of the Ontario Dental Association in Toronto. The thanks of the society were extended to Dr. Johns by Dr. M. Purcell, Pembroke.

Ontario Dental Association

Dr. F. Harold Shepherd of Toronto, was recently elected president of the Ontario Dental Association, succeeding Dr. J. A. Boyd of Stratford.

President-elect is Dr. C. L. Strachan and other officers are: Dr. Edgar A. White, Toronto, archivist and historian; Mrs. R. E. Booker, Toronto, secretary-treasurer; Drs. R. S. Woollatt and W. R. Jackson, Toronto, and Dr. R. G. Hyde, Hagersville, Benevolence Committee; Drs. Marjorie Jackson, Keith Davey, R. R. Butler, M. G. Boyes, D. L. Rife, H. A. Swales, S. T. Peterkin, K. F. Pownall, and E. A. White, all of Toronto, Dental Public Health Committee.

Dr. Shepherd has been on the Board of Governors of the O.D.A. since 1952 and was president of the Toronto Academy of Dentistry 1947-48.

Hamilton Dental Association

The executive of the Hamilton Dental Association for the year 1957-1958 is as follows:

President, Dr. W. H. Feasby; vice-president, Dr. P. T. Smylski; secretary, Dr. R. H. Finlayson; treasurer, Dr. W. Banting; programme chairman, Dr. S. Rosen; directors, Dr. A. J. Quick and Dr. W. W. Baxter; archivist, Dr. A. R. Poag.

Twenty-three past presidents were also honoured at the meeting which was held in Fischer's Hotel, Hamilton, recently.

Thunder Bay Dental Association

The Thunder Bay Dental Association held a clinic recently under the joint auspices of the Faculty of Dentistry, University of Toronto, and the Board of Directors, Royal College of Dental Surgeons of Ontario.

Dr. M. N. Rockman of the Faculty of Dentistry, University of Toronto, spoke at the afternoon session on "Orderly Procedure in Radiodontic Technique", and in the evening on "Radiodontic Interpretation — Principles, Practice and Differential Diagnosis".

A dinner meeting chaired by President Dr. W. Kostyshyn, separated the two sessions of the clinic. Dr. M. L. Stitt was welcomed back after a short illness. Out of town guest was Dr. H. Farley of Nipigon.

Royal College of Dental Surgeons

The 204th meeting of the Board of Directors of the Royal College of Dental Surgeons of Ontario was recently concluded. As this was the first meeting for the new Biennial Term, the results of the elections held last Fall were reported and the new Board when duly inaugurated elected its officers and appointed its committees and representatives for the next two years.

The following, therefore, are the officers, committees and representatives of the Board:

President: Dr. M. C. G. Bebee, District No. 5, Owen Sound.

Vice-president: Dr. M. V. J. Keenan, District No. 3, Sudbury.

Registrar-Secretary-Treasurer: Dr. Wesley J. Dunn.

Directors: Dr. I. W. Hamilton, District No. 1, Ottawa; Dr. W. J. Langmaid, District No. 2, Oshawa; Dr. R. P. Lowery, District No. 4, Toronto; Dr. D. C. Stiles, District No. 6, London; Dr. R. O. Winn, District No. 7, Kitchener; Dr. A. H. Leckie, District No. 8, Hamilton; Dr. R. J. Godfrey, Faculty of Dentistry, Toronto.

Committees

Discipline — Dr. Leckie, Chairman; Drs. Lowery, Winn, Langmaid, Hamilton.

Executive — Dr. Keenan, Chairman; Drs. Lowery, Godfrey, Langmaid, Hamilton.

Examiners and Petitions — Dr. Godfrey, Chairman; Drs. Lowery, Winn.

Government and Legislation — Dr. Langmaid, Chairman; Drs. Keenan, Stiles.

Clinics and Extension Lectures—Dr. Godfrey, Chairman; Drs. Leckie, Hamilton.

Public Relations — Dr. Langmaid, Chairman; Drs. Hamilton, Leckie, Stiles, Winn.

Finance — Dr. Keenan, Chairman; Drs. Stiles, Lowery.

Representatives

Faculty Council — Drs. Lowery, Godfrey, Dunn.

Senate, U. of T. — Dr. Dunn.

Dentists' Legal Protective Association — Dr. Winn.

National Dental Examining Board of Canada — Dr. Godfrey.

Canadian Dental Association—Drs. Langmaid, Keenan, Winn, C. L. Strachan, W. G. McIntosh.

Workmen's Compensation Board — Drs. Keenan, Stiles.

Library Committee — Dr. Dunn.

American Association of Dental Examiners — Dr. Godfrey.

Research Advisory Committee—Dr. Dunn.

E. R. B.

Prince Edward Island

P.E.I. Dental Association

A recommendation that Island communities having a public water supply adopt fluoridation was reiterated by the P.E.I. Dental Association in a strongly worded resolution passed at the annual meeting of the organization. The meeting was held in the Court House in Summerside with the vice-president, Dr. J. A. Doiron, Summerside, presiding.

Dr. J. A. Doiron was elected president for the ensuing year. Other officers include vice president, Dr. H. M. MacKenzie, Charlottetown; secretary-registrar, Dr. H. McIntyre, Charlottetown; council members, Dr. G. D. Barrett, Charlottetown, and Dr. H. E. Clark, Summerside.

A feature of the meeting was a presentation by Dr. Neil J. Boyd, Pathologist with the Department of Health and Welfare. Dr. Boyd gave an interesting and instructive lecture on changes in oral tissue. With the assistance of slides, he showed how early lesions could be recognized, and with early treatment many cases of early cancer could be cured. He was thanked by Dr. L. I. Duffy, Charlottetown, for his presentation on behalf of those present.

Quebec

Montreal Dental Club

The regular monthly meeting of the Montreal Dental Club, and the final of the season, was held in the Queen's Hotel on Monday, April 15, 1957. Dr. E. T. Cleveland presided.

Dr. L. E. Kent Jr. informed the club members of the coming golf meet to be held at Knowlton on June 8-9, and Dr. V. Jekyll spoke briefly on the History of the R.C.D.C. A book on the History of the R.C.D.C. is now on sale.

Dr. R. Dagg introduced the guest speaker of the evening, Dr. Lorne MacLachlan of Ottawa, who spoke on "Dentogenics". Dentogenics, he stated, is to dentistry what retouching is to photography. It is the duplication, in artificial dentures, of minute details of the natural dentition and its surrounding soft tissues. The choice of tooth form is dependent upon all the physical characteristics of the patient, i.e., upon the height, weight, and sex of the individual. The very informative talk was illustrated throughout with excellent slides.

W. D. S.

Mount Royal Dental Society

The Installation Dinner of the Mount Royal Dental Society, marking the close of the activities of the 1956-1957 season, took place on Tuesday, May 7th, 1957.

The newly installed executive for the 1957-1958 season consists of:

President, Dr. A. Bazerman; Vice-President, Dr. A. Colle; Secretary, Dr. D. Steinberg; Treasurer, Dr. D. Solomon; Assistant Secretary, Dr. C. G. Baer; Historian-Archivist, Dr. M. Toker.

Members of the Executive, Drs. D. Muhlstock; M. Simon; M. Lang; I. Lubin; M. Lapedis; H. Rosen; L. Druckman.

Following the Dinner the Mount Royal Dental Society conferred Honorary Life-Membership upon two of its outstanding members, Dr. Gerald Franklin, Professor and Chief of the Department of Orthodontia at McGill University's Faculty of Dentistry, and Dr. Louis Rosen, Lecturer in the Department of Endodontia, also of McGill University, and Past-President of the Montreal Section, American Academy of Dental Medicine and the Montreal Endodontia Society. Both are Past-Presidents of the Mount Royal Dental Society.

C. G. B.

Montreal Endodontia Society

On April 11th and 12th the Montreal Endodontia Society held a post-graduate course in Endodontics in conjunction with the Dental Department of McGill University. The course was presented by Dr. B. Nygaard Ostby, a director of the Norwegian Institute of Dental Research in Oslo, Norway. Dr. Ostby covered a wide range of topics in the field of endodontics, involving diagnosis, pathology, therapeutics, instrumentation and surgery. Many of Dr. Ostby's observations were based on experimental research he himself had performed. His lectures were amply illustrated by means of slides and films in the course of which he demonstrated the use of instruments and drugs he himself has devised.

On Friday evening April 12th a dinner

was held at the Reform Club at which Dr. Ostby was our guest of honour. The executive for the coming year were elected at the meeting following the dinner. Those elected were Dr. Jacques Belanger, president, Dr. David Munro, vice-president, and Dr. Hy Israel, secretary-treasurer.

F. V.

Montreal Dentist Academy President

Dr. Marcel B. Archambault, Montreal, was elected president of the American Academy of Dental Medicine at its 11th annual meeting at the Sheraton Plaza Hotel in Boston, on May 31st.

Dr. William M. Greenhut, New York City, outgoing president, was named treasurer. Others elected are Dr. Don C. Lyons, Jackson, Mich., president-elect; Dr. Herman Becks, San Francisco, vice-president; Dr. George J. Witkin, Yonkers, N.Y., continued as secretary; Dr. Irving Yudkoff, New York City, remains as editor of the Academy's Journal of Dental Medicine.

More than two hundred members and fellows of the group from various parts of the United States and Canada attended the three-day session which opened May 30th.

Saskatchewan

Swift Current and District Dental Society

The Swift Current and District Dental Society held a dinner meeting at the "K" Motel on January 30th. Out-of-town members included Dr. L. Kjorven of Eston, Dr. J. A. Stewart, Dr. A. A. B. Kenny, Dr. M. Medora, all of Maple Creek; Dr. R. Henderson of Eastend, and Dr. E. A. White and Dr. J. E. Fraser, both of Shaunavon.

The guest clinician was Dr. Robert Van Alstine, Professor of Oral Surgery at the University of Alberta.

A Dental Advisory Committee to the Health Region was appointed as follows: Dr. F. L. Pierce, Dr. R. Henderson, and Dr. J. A. Stewart.

The new officers for 1957 are: President, Dr. Stuart Oliver; Secretary-treasurer, Dr. Harold Kern.

IN MEMORIAM

Harvey Alexander Robb — Dr. Harvey Alexander Robb of London, Ontario, died on May 29th.

Dr. Robb graduated as a dental surgeon from the University of Toronto, but chose music as his career. Early in that career he played organ and piano in Toronto theatres and other entertainment establishments before going to New York for advanced study in these instruments. He was organist for Bloor Street United Church. His bent for constructive organizations found outlet when he accepted the invitation to London, Ontario, where, on restricted budgets at both the University and the Conservatory, he developed training courses to meet the needs of an increasingly important section of the Province.

Dr. Robb's later months of life were saddened for him and his family by a painful illness and a succession of accidents, in one of which he suffered a seriously broken hip. He had been in hospital since last November, but was expected to return home in July, when a heart attack ended his life.

He is survived by his wife, Willa, a daughter, Mrs. H. Lucas of Oakville, and a son, A. W. Robb of Montreal.

Frank C. H. Briggs — Dr. Frank C. H. Briggs, one of Hamilton's senior dentists, died recently at the age of 83.

Born in Hamilton, he was an apprentice dentist for some years but graduated from Loyola University in Chicago in 1882. He practised for two years in the United States and returned to Canada to enter the University of Toronto. He graduated in 1903.

In 1914 during the First World War, Dr. Briggs went overseas and served with the Royal Canadian Army Medical Corps. At the end of the war he served a year in India with the Royal Welsh Fusiliers.

Dr. Briggs went to England and opened a practice in Harley Street, where he remained until 1926, when he came to Hamilton. Dr. Briggs retired from his Hamilton practice in 1937.

He was active in All Saint's Anglican Church and a member of the Hamilton Dental Association and the Thistle Club.

Surviving are his wife, Charlotte; two sons, Courtney of Hamilton and John of Sudbury; two daughters, Mrs. M. Lorenzen and Norma, both of St. Catharines and two step-daughters, Louise Young and Shirley Porterfield, both of Hamilton.

Leonard Douglas Hogan — Dr. Leonard Douglas Hogan died in April 1957 at the age of 74.

Born in Tillsonburg in 1883, he received his early education there and entered college in 1900 and participated in many extra curricular activities. After graduating from the University of Toronto in 1904 Dr. Hogan was under age to receive a license and worked in an office through the summer. He practised in Sault Ste. Marie, Gore Bay and Tillsonburg before going to Walkerville where he had his office for fifty years. He is believed to have been the oldest practising dentist in the city.

Dr. Hogan was a life member of the Canadian Dental Association, and served on the Board of Governors for three years. He was also on the Board of Directors of the Royal College of Dental Surgeons for eight years, the last two of which were as president. Dr. Hogan held life memberships in the Essex County Dental Society and the Detroit District Dental Society. He also was a member of the Essex Golf and Country Club, Essex Scottish, life member of Windsor Lodge AF & AM, Ark Chapter and Windsor Preceptory, and Mocha Temple of the Shrine. Dr. Hogan set good examples for the many dentists who followed him to Windsor, and was friendly and helpful to all.

Dr. Hogan served as militia officer between World War I and World War II, and at one time held the rank of major, second-in-command of the Essex Scottish Regiment.

Surviving are his wife, Charlotte, two sons, Ronald F. of Windsor and Wallace L. of Kingsville; a sister, Mrs. A. M. Draper, of Glendale, Calif., and one brother, Rev. Milo A. T. Hogan of Fresno, California.

Alexander W. Muir — Dr. Alexander W. Muir died on June 11, 1957 after a long illness.

Dr. Muir was born in Elora, Ontario. He practised in Fergus, Ontario, after graduating from the Royal College of Dental Surgeons of Ontario in 1907.

He was Past District Deputy Grand Master of Mercer Masonic Lodge, and was an Elder of St. Andrew's Presbyterian Church. During his youth he played lacrosse for both Fergus and Elora.

Surviving are his wife, Agnes, and three daughters, Mrs. A. A. P. Menzies, Fergus; Mrs. B. H. Myers and Mrs. W. J. Horsey, both of Toronto.

James A. Dow — Dr. James A. Dow, 71, a dentist in Winnipeg for the past forty years, died Monday June 3rd at his home. Born in Mitchell, Ontario, he came to Winnipeg to practise in 1917. He was a member of the session of Knox United Church for many years and St. John's Lodge AF and AM as well as the Scottish Rite of Free-Masonry. He had also been a member of Elmhurst Golf Club and during his earlier years was active in YMCA basketball circles.

Surviving are his wife, Caroline; a daughter, Mrs. E. C. Hodgson; a son, James R.; a sister, Miss Minnie Dow, and four grandchildren.

George Byron Redden—Dr. George Byron Redden died recently. He was born in Chester, Nova Scotia, and received his early education at St. Francis Xavier University. He graduated from the Baltimore College of Dental Surgery, of the University of Maryland in the year 1914. He moved to Saltcoats, Saskatchewan, in 1915 where he practised since. He was very active in community affairs, and served for many years on the Board of Trade and the Town Council. He was a member of the Anglican Church.

He is survived by his widow, one daughter and two sisters.

H. W. Rourke — Dr. H. W. Rourke was critically burned in a fire at his apartment in April 1957, and died two days later. Dr. Rourke was the fourth fire fatality in Vancouver this year. He was 82.

Dr. Rourke was pulled unconscious from his blazing apartment where, fire officials said, the Granville Mansions fire appeared to have started.

He was born in New Brunswick and practised in the United States before moving to British Columbia.

Dr. Rourke is survived by a son in New York; a brother, Al, in St. Martins, N.B.; a nephew in California and a nephew in Ottawa.

Elisha William Falconer — Dr. Elisha William Falconer of Toronto, died on May 17th in Queen Elizabeth Hospital, where he had been since 1952.

Dr. Falconer graduated from the Royal College of Dental Surgeons of Ontario in 1895. He was made an honorary member of the R.C.D.S. in 1945.

Dr. Falconer was predeceased by his wife, Charlotte.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th — 8th
1959	Halifax, Nova Scotia	June 21st — 24th
1960	Ottawa, Ontario	September
1961	Saskatoon, Saskatchewan	June 25th — 28th
1967	Toronto, Ontario *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Aug. 3-4 1957	Fifth Annual Roentgenology Workshop	Vancouver, B.C.	Dr. O. F. Wright Sec. Treas.,	4014 Cambie St., Vancouver, B.C.
Aug. 19-22 1957	Pacific Coast Dental Conference	San Diego California	Dr. C. W. Gilman, Secretary,	219 E. 8th St., National City, Cal.
Aug. 28-Sept. 2nd 1957	European Orthodontic Society Meeting	Geneva, Switzerland	Prof. E. Fernex,	1 Place du Port, Geneve, Suisse.
Sept. 7-14 1957	Congres de la Federation Dentaire Internationale	Rome, Italy		Canadian Dental Assoc. 234 St. George St., Toronto 5, Ontario.
Sept. 23-24 1957	Eastern Ontario Dental Association 81st Annual Convention	Chateau Laurier Hotel, Ottawa, Ont.	Dr. A. Sloane Sec. Treas.	101 Rideau St., Ottawa, Ont.
Oct. 13-17 1957	American Institute of Dental Medicine Annual Meeting	The Oasis Hotel, Palm Springs, California	Miss M. G. Lewis Exec. Secret.	2240 Channing Way, Berkeley 4, Calif.
Oct. 21, 1957	Toronto Academy of Dentistry Annual Dinner	Royal York Hotel, Toronto Ont.	Dr. J. A. Bigelow, Secretary,	2298 Yonge St., Toronto, Ont.
Oct. 23-25 1957	Thirty-third Annual Fall Clinic	Montreal, P.Q.	Dr. D. B. Ward, Chairman	Fall Clinic, 1414 Drummond St., Suite 309, Montreal, Quebec.
Oct. 31-Nov. 2nd, 1957	American Academy of Periodontology Annual Meeting	Hotel Di Lido Miami Beach, Florida	Dr. H. A. Hartman	Chairman Pub. Comm. 4187 Pearl Road, Cleveland 9, Ohio
Nov. 1-2 1957	American Academy Gold Foil Operators	Miami, Florida	Capt. R. B. Wolcott	Navy Dent. Tech. School, Naval Training Center, San Diego, Calif.
Nov. 28, 1957	Toronto Academy of Dentistry Winter Clinic	Royal York Hotel, Toronto Ont.	Dr. J. A. Bigelow, Secretary,	2298 Yonge St. Toronto, Ont.
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St. Tor.	Dr. J. A. Bigelow, Secretary,	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Royal York Hotel, Toronto Ont.	Dr. J. A. Bigelow, Secretary,	2298 Yonge St., Toronto, Ont.

SHORT GRADUATE COURSE

Tufts University—Courses in Periodontology—October 7-October 11, 1957. **Tuition: $150.00**

Apply: Director of Graduate & Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Mass.

POSTGRADUATE COURSES

New York University College of Dentistry announces a forty hour postgraduate course—Principles and Practice of Endodontics—beginning Wednesday, October 23, 1957.

Wednesdays & Fridays, 9.00 am. to 1.00 pm. for five weeks.

Tuition: $200.00 **Instruments: $65.00 (approximately)**

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Volume 23
Numéro 7
Juillet 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Récapitulation de la genèse et classification des anomalies du développement dentaire*

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Si nous voulons bien comprendre les anomalies du développement dentaire et les classifier dans un système logique, nous devons nous baser sur leur genèse. De ce point de vue, nous observons tout d'abord certaines différences essentielles de caractère.

Dans le premier groupe se trouvent des dysplasies vraies, primaires, des lésions fixées. Un trouble dans le développement du germe dentaire cause une formation de tissus dentaires aux endroits atypiques. Ces tissus passent par les mêmes étapes évolutives que les tissus normaux et, quand leur développement est terminé, l'anomalie reste fixée. Dans la plupart des cas, il s'agit de tissus d'une structure microscopique à peu près normale, mais déposés aux endroits atypiques. C'est surtout un trouble de morphologie.

Dans l'anatomie pathologique générale, on appelle un tel défaut de composition des tissus *un hamartie*. La plus simple de ces anomalies est, par exemple, la formation de l'émail sur la racine sous forme de perles adamantines ou amélomes superficiels.

S'il s'agit d'une formation volumineuse et irrégulière, ressemblant à une tumeur, on l'appelle *un hamartome*. Un hamartome n'est pas une vraie tumeur; il n'est pas question ici de prolifération autonome, illimitée. La plupart des odontomes sont des hamartomes.

Un trouble de développement pareil peut donner origine même à une prolifération autonome, à une vraie tumeur. C'est alors *un hamartoblastome*. De cette façon se forment, par exemple, certains épithéliomas adamantins ou adamantinomes.

Dans le second groupe, on trouve des anomalies ayant aussi leur origine dans un défaut primaire du développement. Ici, la morphologie est à peu près normale, mais les tissus ont une structure histologique défectueuse. En conséquence,

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Conférence présentée à la Société Dentaire de Montréal, en avril 1957.

les tissus durs sont incapables de résister à la fonction et aux influences externes et deviennent, de ce fait, des lésions caractéristiques, progressives, jusqu'à la destruction totale. Cela fait donc penser plutôt à un trouble trophique, à une dystrophie. Nous pouvons grouper dans cette classe la dentinogenesis imperfecta et l'amelogenesis imperfecta.

Dans le troisième groupe, on trouve les anomalies secondaires, produites par un trouble trophique pendant le développement des dents. Comme suite du caractère spécial du développement des dents et du manque de faculté de régénération des tissus durs, l'anomalie, une fois formée, persiste ensuite à l'état fixe. Cela fait penser à une dysplasie secondaire, suite d'un trouble trophique. Nous groupons ici les hypoplasies et les hypocalcifications.

La dent est une formation ecto-mésodermique. L'invagination épithéliale est le phénomène le plus frappant du développement dentaire. La formation de la plupart des anomalies du développement peut être expliquée par une prolifération atypique de l'épithélium.

Rappelons brièvement quelques notions fondamentales d'embryologie: de la lame dentaire prolifèrent des bourgeons épithéliaux, dits organes prédentaires. Chaque bourgeon se déprime en prenant la forme d'une cloche, dans laquelle nous discernons trois couches de cellules: une couche externe, une couche interne et une substance intermédiaire, dite gelée de l'émail. L'organe en cloche entoure la papille dentaire, formée du tissu mésodermique, laquelle se couvre plus tard par la dentine. La couche interne, c'est-à-dire, les adamantoblastes, forment l'émail. Du bord de la cloche, la prolifération des cellules épithéliales continue, sous la forme d'une couche mince, dite gaine épithéliale de Hertwig. Ici, nous n'observons plus de gelée de l'émail, il ne se forme plus d'émail. A l'intérieur de cette gaine épithéliale, se forme la dentine de la racine.

Entre les racines des molaires, certaines parties des bords opposés de la gaine épithéliale prolifèrent, convergent les unes vers les autres et se fusionnent au dessous de la cavité pulpaire. Une fusion exacte des bords épithéliaux est difficile; des cellules épithéliales surnuméraires produisent ici souvent des anomalies. Surtout à cet endroit, nous pouvons faire des observations importantes qui nous permettent d'étudier les débuts de la formation des anomalies.

Toutes les cellules épithéliales du germe dentaire ont la même origine: la lame dentaire. Elles ont donc toutes le même caractère biologique. Dans des circonstances jusqu'ici inconnues, quelques-unes de ces cellules peuvent reprendre les facultés des autres cellules spécialement différenciées et peuvent proliférer, former des invaginations ou des évaginations et causer la formation de tissus dentaires atypiques quant à leur place et à leur forme. Leurs facultés formatives ne doivent donc pas être liées dans tous les cas à leur position topographique.

La couche épithéliale externe et la couche interne s'unissent au bord de l'organe adamantin dans la gaine épithéliale de Hertwig. Il est très important de constater de laquelle de ces deux couches la prolifération est partie. Tout le caractère de l'anomalie dépend de ce fait.

Nous pouvons répartir les anomalies en deux classes principales: a) les anomalies causées par une prolifération de la couche interne de la gaine épithéliale, et b) les anomalies causées par une prolifération de la couche externe de la gaine épithéliale. Entre ces deux classes, il y a une différence essentielle. Dans chacune, nous connaissons quelques groupes d'anomalies, entre lesquelles la différence est seulement graduelle. La différence est non seulement théorique, mais clairement visible et importante aussi du point de vue clinique.

I.—*Anomalies causées par la prolifération de la couche interne de la gaine épithéliale.* L'anomalie se forme à l'intérieur de la gaine, ses tissus durs continuent ceux de la dent, l'anomalie et la dent sont une seule pièce.

La couche épithéliale interne peut former (A) une *évagination;* dans ce cas, l'anomalie se trouve à la surface de la dent. Elle peut former (B) une *invagination;* dans ce cas, l'anomalie est incluse dans la dent. Il peut s'agir d'une évagination ou d'une invagination simple, ou il peut s'agir d'une prolifération gravement troublée, très irrégulière.

A.—1. Si les cellules de la couche interne reprennent simplement la faculté de former l'émail, sur la racine se forment les perles adamantines, plus exactement les *amélomes superficiels* (enameloma). Aux cas d'évagination légère de l'épithélium, il se forme un *amélome superficiel avec base de dentine.* Une évagination plus grande forme un *amélome superficiel avec pulpe.*

2. L'évagination encore plus large mène à la formation d'un *tubercule surnuméraire* ou d'une petite *couronne surnuméraire.*

3. Une évagination de la couche interne de la gaine épithéliale avec une prolifération excessive et troublée forme un *odontome adhérent.* L'aspect d'un odontome est bien connu. Il est composé de tous les tissus dentaires. La dentine de l'odontome adhérent continue directement celle de la dent. La dent originaire peut être gravement déformée, l'odontome adhérent peut être même plus grand que celle-ci, et provenir soit de la racine, soit de la couronne. L'évagination peut se produire dès le début du développement du germe dentaire de façon qu'on trouve un odontome où la dent originaire est à peine ébauchée.

B.—1. Dans le cas d'une invagination de la couche interne de la gaine épithéliale dans la papille mésodermique, l'anomalie est incluse dans la dent elle-même. La plus simple anomalie de ce type est un *amélome inclus.* C'est une plaquette ou hémisphère d'émail, incluse totalement ou partiellement dans la dentine, sous la surface de la racine. On peut découvrir une communication avec la surface ou des vestiges de la prolifération épithéliale. L'amélome inclus peut avoir son noyau propre de dentine, même avec une petite communication avec la pulpe.

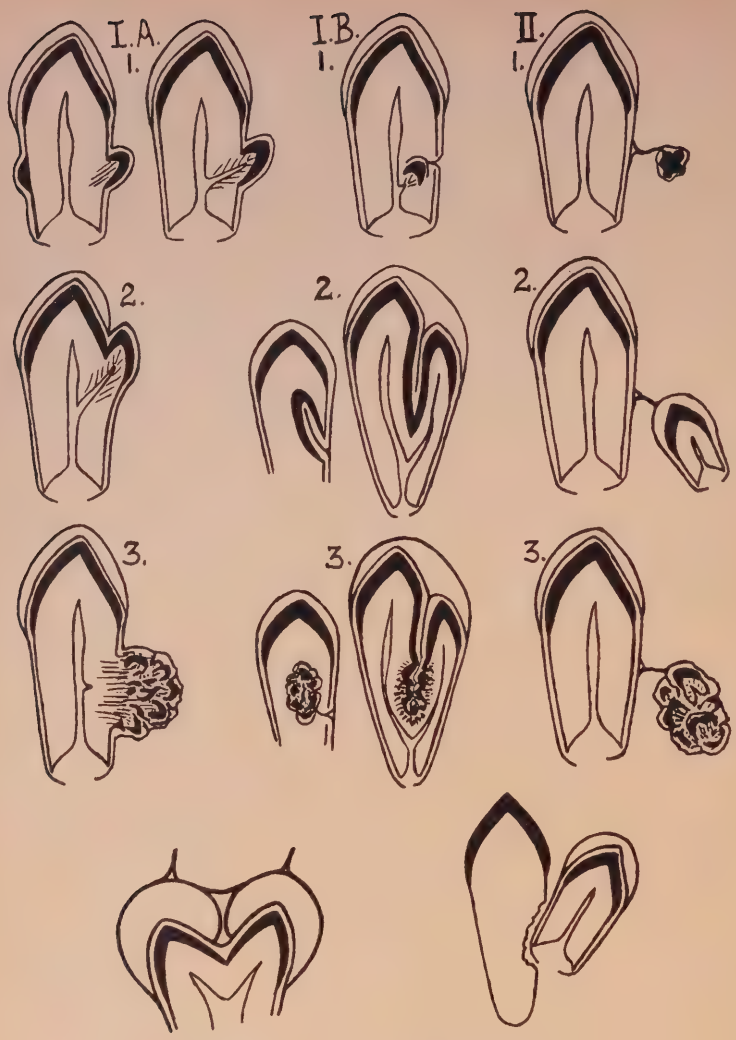
2. Mieux connues sont les *invaginations de l'émail* sur la couronne. On trouve souvent sur la couronne des incisives surnuméraires et parfois, dans les incisives latérales supérieures, une invagination qui pénètre soit par l'émail, soit aussi par la dentine. Une invagination plus profonde de l'épithélium mène à l'anomalie dite *dens in dente.* Les différentes formes de cette invagination sont bien connues en littérature dentaire. L'invagination peut se produire, non seulement sur le sommet de la couronne, mais aussi du coté de la dent, à la racine.

3. Une invagination de la couche interne de la gaine épithéliale avec une prolifération excessive et troublée produit un *odontome inclus.* A l'extrémité de l'invagination dite dens in dente, l'épithélium forme plusieurs saillies irrégulières, les tissus sont mal développés et la disposition en est troublée. A l'intérieur de la dent, est incluse une formation composée de dentine et d'émail, rappelant un petit odontome. L'invagination produisant un odontome inclus peut commencer aussi sur la racine.

L'épithélium invaginé dans la pulpe y peut activer le tissu mésodermique pour la production de la dentine de certaines *denticules.* Les *débris épithéliaux intrapulpaires* peuvent s'expliquer comme un reste d'une invagination.

Toute la gaine épithéliale peut proliférer dans une direction incorrecte. Le résultat est la formation d'une *dent courbée* (dilacération). La plupart de ces cas résultent d'un traumatisme pendant le développement de la dent, ce qui est bien visible microscopiquement. Mais parfois on peut observer que le développement de cette anomalie a été graduel et qu'elle résulte probablement d'un trouble de la prolifération épithéliale d'une cause inconnue, non-traumatique.

II.—*Anomalies causées par la prolifération de la couche externe de la gaine épithéliale.* L'anomalie se forme hors de la gaine; ses tissus durs sont une pièce séparée. Elle est jointe à la dent originaire seulement par des vestiges d'épithé-



Anomalies du développement dentaire provenant de la

I. couche interne de la gaine ép.		II. couche externe de la gaine ép.
A. évagination	B. invagination	
1. amélome superficiel a.s. avec base de dentine a.s. avec pulpe	1. amélome inclus	1. amélome libre
2. tubercule surnuméraire	2. invagination de l'émail dens in dente	2. dent surnuméraire
3. odontome adhérent	3. odontome inclus	3. odontome libre
dentes confusi dents géminées		dentes concreti dents géminées fausses

lium évaginé et par le tissu conjonctif.

1. Quelques-unes des cellules de la couche externe de la gaine épithéliale reprennent la faculté de former l'émail. Ainsi se forment des *amélomes libres*. Ce sont de petites formations rondes, ovales ou irrégulières, situées dans le périodontium, séparées de la dent, au moins à l'origine, par le tissu conjonctif du périodonte. Le plus souvent, les amélomes libres sont composés de *tissu améloïde*. Dans les manuels de pathologie, on les trouve dans le chapitre des cémenticles. Un amélome libre est souvent recouvert par le cément et une certaine attention est nécessaire pour le distinguer d'un cémenticle vrai.[7]

2. L'évagination et la prolifération de la couche externe de la gaine épithéliale peuvent former un bourgeon et un organe prédentaire surnuméraire, presque normal ou minuscule, par un procédé analogue à celui par lequel une dent origine de la lame dentaire. Ainsi se forme, soit une *dent surnuméraire,* soit un groupe de *dents surnuméraires,* ou une dent normale, ou bien des dents minuscules ou quelque peu irrégulières.

3. Une évagination de la couche externe de la gaine épithéliale avec prolifération troublée forme un *odontome libre*. Dans le voisinage d'une dent se trouve une formation typique d'un odontome, composée de tous les tissus dentaires, disposés en pièces plus ou moins déformées et mêlées. Dans un *odontome composé,* on peut reconnaître plusieurs dents déformées, unies ensemble. Un *odontome simple* contient des tissus dentaires sans aucune organisation. Cette différence n'est que graduelle.

Il convient de souligner que les odontomes ne sont pas des tumeurs, mais des troubles du développement, des hamartomes avec préformation embryonnaire. Un trouble embryonnaire mène à une prolifération atypique des tissus du germe dentaire, laquelle n'est pas illimitée et qui se ralentit et s'arrête selon sa préformation embryonnaire. Les odontomes et toutes les autres anomalies sont composées, au début, de tissus mous, tout comme les germes des dents. Par la calcification, l'anomalie prend son apparence clinique définitive et son développement est achevé. Un odontome libre équivaut à une dent surnuméraire à évolution gravement troublée. — Il est possible qu'une vraie tumeur se forme de cete manière, mais ces hamartoblastomes n'appartiennent pas à ce chapitre-ci.

Deux germes dentaires peuvent s'unir. Les *dentes confusi* se présentent lorsque l'union se produit au début du développement, entre l'épithélium des organes prédentaires. Ces cas sont caractérisés par la continuité de la dentine régulière de ces deux parties. La pulpe peut être unique ou partiellement divisée. La réunion des deux dents peut être totale ou partielle, soit par les couronnes, soit par les racines. Les *dents géminées* sont l'union analogue d'une dent normale avec une dent surnuméraire. Les *dentes concreti* sont celles où la réunion se produit plus tard et entre les racines. La racine de la dent se développe vers la racine d'une dent avoisinante, cause sa résorption et poursuit son développement vers l'intérieur de celle-ci. L'abondante production de cément unit ensuite les deux dents. Une dent surnuméraire peut se joindre à la dent originaire très proche par cément secondaire. Ce sont des *dents géminées fausses*. Leurs chambres pulpaires sont indépendantes, non communiquantes. Même plusieurs dents surnuméraires peuvent être ainsi jointes.

On suppose que les cellules épithéliales sont susceptibles d'être le mobile de la production de certains *cémenticles*.[9]

Il semble justifiable de faire, par analogie, quelques hypothèses qui pourraient un jour être prouvées. Ainsi, par exemple, la possibilité d'une évagination provenant directement de la lame dentaire, laquelle mènerait à la formation des dents surnuméraires ou des odontomes.

Cette conception du rôle de l'épithélium dans l'origine des anomalies du développement est basée sur les idées de Jesensky et sur les études d'un groupe de chercheurs de l'école de Prague. Elle

explique et classifie les anomalies, surtout en ce qui concerne leur forme, la morphogenèse.[1,4] Dans la partie qui suit, nous allons étudier le rôle de l'épithélium en ce qui concerne la structure des tissus, l'histogénèse, soit dans la dent, soit dans les anomalies.

Weinmann, Svoboda et Woods ont attribué à la couche interne de l'épithélium de l'organe adamantin cinq fonctions: 1. Dans un stade *morphogénétique,* l'épithélium modèle la forme de la couronne. 2. Dans un stade dit *organisant,* l'épithélium donne l'impulsion aux cellules mésodermiques adjacentes pour leur différenciation en odontoblastes. 3. Dans un stade *formatif,* atteint seulement par les adamantoblastes de la couronne, ceux-ci forment le gabarit de l'émail. 4. Dans un stade de *maturation,* les adamantoblastes participent aux processus de la minéralisation complète de l'émail. 5. Dans un stade de *protection,* l'épithélium a pour fonction de protéger l'émail contre un contact direct avec le conjonctif.[10]

Un trouble endommageant les cellules épithéliales à un seul de leurs cinq stades résulte en une anomalie très caractéristique. Dans la plupart des cas, le trouble n'est pas limité à une seule de ces cinq fonctions et la structure des anomalies est plus compliquée. Néanmoins, en connaissant et séparant ces fonctions, nous pouvons comprendre même les anomalies compliquées.

1. La fonction *morphogénétique* a été exposée dans la première partie, parce qu'elle est connue depuis longtemps. Un trouble embryonnaire limité à la fonction morphogénétique résulte en une anomalie de forme, composée de tissus de structure normale. Par exemple, certains amélomes, invaginations, tubercules et dents surnuméraires.

2. La fonction *organisante* doit être correctement comprise. Dans les descriptions classiques du développement dentaire, on exprime parfois l'opinion que la différenciation des odontoblastes serait dépendante de la présence de tissu épithélial, parfois même encore l'opinion que les odontoblastes ne formeraient la dentine qu'après une impulsion donnée par l'épithélium. On tend à admettre que la formation de la racine serait dépendante de la présence de la gaine de Hertwig, au contact de laquelle se différencient les odontoblastes.

Rappelons tout d'abord que de nombreux travaux ont prouvé le rôle passif des odontoblastes dans la dentinogénèse. La dentine peut se former sans odontoblastes. La pulpe peut régénérer une paroi dentinaire et différencier une nouvelle couche d'odontoblastes, sans présence d'épithélium. Dans le stade organisant, l'épithélium entoure une partie du tissu mésodermique qui prend ensuite un caractère spécifique et devient la pulpe dentaire qui est susceptible de former la dentine. Le tissu ainsi différencié en tissu pulpaire conserve ses facultés et il peut, même ensuite sans présence de l'épithélium, proliférer et former la dentine. Cette conception a été confirmée non seulement par des observations de la dentinogénèse normale et pathologique, mais aussi par l'expérimentation.

On pourrait donc supposer que le rôle de la gaine de Hertwig consisterait à transformer progressivement le tissu mésodermique en pulpe radiculaire et à diriger ainsi la formation de la racine. Une étude expérimentale a montré que la pulpe forme la racine, même si elle a été privée d'une grande partie de la gaine épithéliale.[5] Le rôle de la gaine de Hertwig consiste à isoler le tissu pulpaire néoformé du conjonctif péridentaire. Les fonctions attribuées à l'épithélium dans le développement dentaire ne se manifestent normalement que dans l'épithélium de l'organe adamantin.

Si les cellules de la gaine de Hertwig reprennent la fonction organisante, une anomalie se forme. Ceci se produit surtout dans les odontomes, qui, d'ailleurs, présentent les suites des troubles de toutes les cinq fonctions. La pulpe ainsi formée est souvent mal organisée et elle ne peut pas former la dentine normale.

Dans la *dysplasie de Capdepont* ou la *dentine opalescente héréditaire,* les pulpes

ont une structure très primitive, les cavités pulpaires et les canaux radiculaires sont partiellement ou totalement oblitérés. La dentine est très irrégulière, les canalicules dentinaires sont moins nombreuses, très sinueuses, la calcification de la dentine est incomplète. L'émail est à peu près normal, sa couleur brune-grise ou brune-bleue et sa vulnérabilité sont des suites de la qualité inférieure de la dentine.

Tout cela évoque l'idée d'une altération profonde de la différenciation de la pulpe et de la formation de la dentine, causée par un trouble limité à la fonction organisante, mais généralisé sur tout épithélium de tous les germes dentaires.

On observe des altérations dentaires analogues dans les cas d'osteogenesis imperfecta, où on les appelle *dentinogenesis imperfecta.* Ici, il s'agit d'un trouble général des nombreux tissus mésodermiques. Les altérations dentaires semblent indépendantes de l'épithélium. Des travaux récents essayent de déterminer les différences histologiques entre la dentine opalescente héréditaire et la dentinogenesis imperfecta accompagnant l'osteogenesis imperfecta.[2,3]

3. Un trouble de la fonction *formative* de l'épithélium peut consister soit en un défaut de formation, soit en un excès de formation, soit en une altération qualitative de la formation.

Un arrêt total de la formation de l'émail résulte en une aplasie qui est généralement limitée, soit à une certaine partie d'une dent, soit à des parties correspondantes de toutes les dents se formant pendant une certaine période. Nous parlons des *hypoplasies de l'émail.*

L'excès de formation de l'émail se présente comme les amélomes et l'émail dans les odontomes.

Une altération qualitative de la fonction formative résulte en *tissu améloïde.* Dans la prolifération aux endroits atypiques, souvent les cellules épithéliales ne se disposent pas régulièrement, elles ne déposent pas leurs produits sous forme de prolongements de Tomes et de prismes, mais la substance néoformée prend plutôt une forme sphérique ou ovale. Il se forme de petits granules qui s'accroissent, se fusionnent pour former des bandes, des lamelles ou des groupes irréguliers. Il se forme ainsi un tissu calcifié, d'origine épithéliale, analogue à l'émail, mais sans prismes. Nous l'appelons le tissu améloïde.

Comme dans la formation de l'émail, le tissu améloïde s'élabore par une première déposition de substance moins calcifiée, la *matrice du tissu améloïde.* A ce stade, succède le stade de maturation avec l'imprégnation minérale complète. Dans cette formation atypique, le stade de maturation aussi est souvent troublé et la maturation du tissu améloïde reste incomplète. Egalement, la fonction protectrice de l'épithélium est souvent insuffisante et le tissu améloïde est recouvert par le cément. Nous trouvons ces phénomènes surtout dans les amélomes libres et dans les odontomes.[7]

4. La *maturation.* La formation du gabarit ou matrice de l'émail ou pré-émail débute au sommet de la dent et son rythme produit les stries de Retzius. Quand un prisme est complètement formé, la maturation commence et aboutit à la minéralisation complète du prisme. La maturation commence aussi au sommet de la dent et elle suit les prismes dont la formation vient de s'accomplir. La limite de la maturation ou celle de ses défauts suit donc une ligne parallèle aux prismes.

Un trouble de maturation arrête la minéralisation et une partie de l'émail reste au stade de matrice de l'émail. Ce sont des *hypocalcifications de l'émail,* des taches opaques blanches sur l'émail de forme et d'épaisseur normales. Plus tard, l'hypocalcification se minéralise partiellement, à sa base, par les minéraux passant par la dentine, à sa surface, après l'éruption, par les minéraux de la salive. Le trouble trophique n'est pas limité exactement à un stade et c'est pourquoi les hypoplasies se trouvent souvent combinées avec les hypocalcifications de l'émail.

Dans certaines formes d'hypocalcifica-

tions, la structure microscopique montre qu'elles sont la suite de formation d'une couche défectueuse du pré-émail qui n'est pas susceptible de se minéraliser complètement. Etant donc un trouble de formation, elles sont limitées par les stries de Retzius.[6]

Les hypoplasies et les hypocalcifications de l'émail se présentent sous certaines formes cliniques très caractéristiques montrant leur genèse.

Une *hypoplasie* ou une *hypocalcification de cause locale* affecte une seule dent. L'une et l'autre sont causées surtout par une inflammation autour d'une dent temporaire gangréneuse ou par un traumatisme. Une hypoplasie locale est représentée par la dent de Turner ou par un petit défaut isolé. Une hypocalcification locale consiste en une tache blanche, opaque, à surface dure.

Les *hypoplasies* et *hypocalcifications secondaires* sont clairement une suite d'un trouble général qui endommage, à un certain moment, tous les adamantoblastes de toutes les dents qui se trouvent à ce moment au stade de formation ou de maturation. Les lésions sont alors bien régulières, circulaires, disposées d'une façon caractéristique sur des groupes symétriques de dents. La chronologie est bien évidente cliniquement: les lésions commencent à la hauteur de la couronne jusqu'à laquelle l'émail était déjà formé au moment du début du trouble général. Microscopiquement, une hypoplasie commence à une strie de Retzius, une hypocalcification à un prisme certain, ce qui permet d'étudier en détails la chronologie et le rythme du trouble primaire. Naturellement, aussi la formation de la dentine est troublée, mais moins sérieusement. Le caractère des lésions ne permet pas de conclusion sûre quant aux causes qui peuvent être différentes. Bien connues sont surtout les dents rachitiques, les dents d'Hutchinson, "mottled enamel".

Un excès de fluor dans l'eau de boisson arrête exclusivement la maturation. Il en résulte un "mottled enamel", des hypocalcifications pures de l'émail avec localisation typique, démontrant leurs caractère secondaire. Il est possible qu'une autre cause puisse produire des hypocalcifications sans hypoplasies.

L'amelogenesis imperfecta est une rare maladie *primaire* de l'épithélium de tous les germes dentaires. On ne trouve aucune cause générale, on n'observe aucune relation avec la chronologie de la dentition. Tout l'émail de toutes les dents est altéré. La maladie est héréditaire. On distingue deux formes de cette maladie: l'hypoplasie brune héréditaire et l'hypocalcification héréditaire.[10]

Dans l'*hypoplasie brune héréditaire de l'émail,* l'émail est mince, à structure très irrégulière. L'aspect microscopique est très caractéristique, les défauts n'ont pas de relation avec les stries de Retzius.

Dans l'*hypocalcification héréditaire de l'émail,* une couche à peu près normale d'émail est formée, mais elle n'est pas mineralisée normalement, elle est opaque et fragile. Microscopiquement, l'hypocalcification est généralisée, sans relation aux stries de Retzius ni aux prismes, sans rythme. L'émail est pigmenté et détruit bientôt après l'éruption. Parfois, il est résorbé ou recouvert par le cément avant l'éruption.

L'étude microscopique permet de considérer l'hypoplasie brune héréditaire comme un trouble spécial du stade de formation, l'hypocalcification héréditaire comme un trouble spécial du stade de maturation.

5. Dans le stade de *protection,* l'épithélium a pour fonction de protéger l'émail contre un contact direct avec le conjonctif. Au cas d'un trouble à ce stade, cette protection est insuffisante et l'émail est, soit recouvert par le cément, soit résorbé, et les défauts causés par la résorption sont ensuite recouverts et plus ou moins remplacés par le cément.

On observe ces phénomènes surtout combinés avec les troubles des stades précédents. Les amélomes sont souvent recouverts par le cément. Dans les odontomes et dans les cas de l'amélogenesis imperfecta, on observe des résorptions de l'émail avec apposition du cément.

Récemment, on a attribué à l'épithélium un stage desmolytique. Il reste à démontrer si nous pouvons attribuer à un trouble de cette fonction des anomalies caractéristiques de la dent.

L'explication de la génèse des anomalies du développement dentaire est appuyée sur de nombreuses observations en différentes étapes du développement, sur des observations directes de l'épithélium et sur l'expérimentation. Elle peut servir de base logique et systématique à l'étude et à la classification de toutes les anomalies, même des anomalies compliquées de transition ou des cas nouveaux, jusqu'ici inconnus.

Le chapitre sur les anomalies du développement contient un plus grand nombre de phénomènes pathologiques que tout le reste de la pathologie de tissus dentaires dûrs. Il est donc important de baser ce chapitre de pathologie dentaire sur un système solide.

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Anomalies héréditaires de la langue

1) **Enroulement de la langue**
Possibilité de relever les bords de la langue pour former celle-ci en gouttière longitudinale; positive chez 67 à 72% des femmes, 60 à 65% des hommes, capacité héréditaire en dominance régulière.

2) **Pliure de la langue**
Possibilité de retourner le bout de la langue sans l'aide des dents. Existe chez 3% des individus. Hérédité imprécise.

3) **Brièveté du frein de la langue**
Herédité en dominance dans trois familles (Komai).

4) **Macroglossie**
Se rencontre au cours du myxoedème ou de l'amyloïdose prétibiale ou de façon pure, isolée, par lymphangiome caverneux de la langue.

5) **Langue plicaturée ou scrotaie (Horand) ou langue charnue (Kaposi)**
Assez fréquente (3.3% sur 5138 enfants examinés). Nombreuses observations familiales en dominance atteignant jusqu'à 6: chez 172 sur 394 membres de 87 familles, 29 pères et 51 mères l'ont. Se rencontre dans le mongolisme (80%), l'oligophrénie, l'aliénation (40%), l'urticaire, l'hyperthyroïdie, les végétations adénoïdes (50%) et le psoriasis.

6) **Glossite exfoliatrice marginée ou langue géographique**
Considérée comme héréditaire soit directement soit sous la condition d'un état héréditaire de fragilité de la muqueuse.

7) **Leucoplasie linguale**
Kératose congénitale de la muqueuse se présentant comme une leucoplasie classique. Toujours associée ou presque, à d'autres gérodermatoses mais a déjà été vue isolée.

8) **Syndrome de Gongerot Sjogren ou vérodermostèose**
Insuffisance progressive puis atrophie et secheresse des muqueuses oculaire, buccale, de la peau, troubles de la calcification des os, des articulations et des dents. Observations familiales plaident en faveur d'une prédisposition héréditaire.

(A. Touraine)

Le rôle de la chirurgie dentaire dans un service de santé

par HENRI SILBERT, B.A., L.S.D. (Belgique), D.D.S., Montréal

(Suite)

Diagnostic et traitement

Le dentiste doit connaître les symptômes du cancer afin de poser un diagnostic et ensuite référer le patient chez le spécialiste. Toutes lésions de la bouche, qui n'ont pas de tendance vers la guérison après trois semaines et qui présentent les symptômes d'induration, d'ulcération et de tuméfaction, sont considérées comme suspectes. Le patient n'est pas au courant du danger qui le menace, car la lésion n'est pas douloureuse.

La *biopsie* s'avère un moyen de diagnostic sûr de la lésion cancéreuse. Le dentiste de service de santé joue un rôle efficace dans la prévention anti-cancéreuse, en adoptant les précautions suivantes:

1. Chaque patient suspect est soumis à un examen buccal systématique.
2. La procédure d'examen se compose de l'examen extra-oral et intra-oral;
   a) *Examen extra-oral*: remarquer les anomalies de la peau, du facies, de la muqueuse et des lèvres. Palper les ganglions lymphatiques, en vue de dépister l'induration dans les régions des glandes sub-maxillaires, sub-linguales, sous-mentonnières et cervicales.
   b) *Examen intra-oral*: remarquer la membrane de la muqueuse des lèvres, joues, plancher de la bouche, palais, gencives et dents. Les régions couvertes d'hyperplasie, leucoplasie, ulcérations et tuméfactions doivent être soumises à un examen attentif.
3. Eliminer et corriger les irritations buccales chroniques. Sarnat proconise la procédure suivante:
   a) éliminer les bords tranchants des dents et des obturations
   b) éliminer les foyers d'infection chronique
   c) réduire les excès de tabac
   d) extirper les habitudes vicieuses occupationnelles (garder des clous dans la bouche)
   e) vérifier le dosage des rayons actiniques (lampe de soleil)
   f) Ne pas employer la médication escharotique pour le traitement des tissue mous.
4. L'absence de détection d'une petite région cariée peut aboutir à la perte de la dent, mais l'absence de détection d'une petite lésion cancéreuse peut aboutir au décès du patient.[9]

Education

La relation publique:

Le programme de santé dentaire publique est basé sur le principe de la relation du dentiste avec le public. Ce programme doit être dynamique, car le dentiste est en constante relation avec le public, et les différents courants économiques, sociaux et politiques. La relation publique est composée d'un contact dans les deux sens: de l'administration vers le public et du public vers l'administration. Le dentiste de service de santé joue réellement son rôle quand il est, en même temps, un "leader" et un disciple: un "leader-éducateur" du public et un adepte sensible à différentes opinions et aux besoins du public auquel il rend service.

Le dentiste de service de santé, qui veut gagner la confiance du public à l'adoption de son programme de santé dentaire, doit savoir:

1. Qu'est-ce que le public pense de son effort? Combien sont au courant de son programme? Qui s'oppose à son programme et pour quelle raison?
2. Le dentiste doit tenir le public au courant de ses réalisations.
3. La relation publique représente un contact dans deux sens:
   Public La santé dentaire publique

4. Les communications et conférences constituent le meilleur moyen d'entamer le contact pour promouvoir les bonnes relations publiques. Le dentiste doit se faire comprendre par le public dans un language compréhensible, afin que les renseignements qu'il donne soient bien compris, profitables et acceptés.[9]

l'education de la santé dentaire

L'éducation en santé dentaire peut être définie comme une somme totale de toutes les expériences qui influencent favorablement les habitudes, attitudes et connaîssances relatives à la santé dentaire de l'individu et de la société.

La raison essentielle de la négligence des soins dentaires n'est pas d'ordre économique, mais psychologique et mental. La phobie du dentiste, l'ignorance et manque de compréhension de la part de la population du problème de la nécessité des soins dentaires est profondement enracinés. Le changement de la mentalité de la population par l'éducation représente le devoir essentiel du dentiste dans un service de santé. Une fois le patient instruit de l'importance de la nécessité des soins dentaires, il se soumet volontairement aux soins prodigués par le dentiste.

Il est important de guérir le mal, mais il est aussi important d'éduquer le patient de ne pas négliger l'état de sa bouche. La "dentisterie de groupe" organisée dans un service de santé peut rendre des services inestimables dans le champ d'éducation de santé dentaire. En résumé, l'éducation de santé dentaire est un *problème publique.*

Le terme *authenticité* représente les opinions courantes et scientifiques qui servent de base à l'éducation en santé dentaire. En se basant sur les opinions des autorités dans le domaine de la science dentaire, les principes suivants doivent être appliqués afin de réduire considérablement l'incidence et la prédominance de la maladie dentaire:

1. Fluoruration massive des eaux potables publiques.
2. Application topique de solution de fluorure de sodium de 2%, surtout aux enfants qui ne peuvent bénéficier d'un programme de fluoruration des eaux potables publiques.
3. Assurer dans la diète quotidienne les sept aliments de base aux Etats-Unis, et cinq au Canada.
4. Réduction considérable de la consommation du sucre raffiné et des boissons sucrées.
5. Brossage des dents, après chaque repas.
6. Administration des soins préventifs à partir de l'âge de trois ans. Les visites chez le dentiste, au moins une fois par année, peuvent réduire considérablement le taux de défectuosités accumulées. Actuellement, un quart de la population reçoit un traitement dentaire raisonnable.
7. Le dentiste qui donne des soins dentaires aux patients en bas âge peut fournir un examen complet de la bouche de l'enfant par la radiographie complète, par l'examen des modèles d'étude, par le test salivaire et par l'analyse de la diète. Cet examen lui permettra de dépister: a) les caries b) les défauts de développement c) la susceptibilité à la carie d) les habitudes vicieuses e) les zones de négligence.
8. Le dentiste doit traiter les caries des dents temporaires le plus tôt possible, en abolissant une fausse notion d'attente avec le traitement des dents de lait et, de cette façon, maintenir les dents primaires dans une bonne condition jusqu'au temps de leur exfoliation.
9. Le dentiste peut décider de l'extraction d'une dent temporaire qui persiste après le temps normal d'exfoliation.
10. Le dentiste peut maintenir la santé de la bouche:
    a) en assurant la forme de contour correcte des obturations.
    b) en remplaçant les dents temporaires extraites prématurément par des appareils de maintien, afin de prévenir une malocclusion future.
    c) en remplaçant les dents permanentes absentes.
    d) en assurant une prophylaxie, deux fois par année, et en appliquant un examen de routine périodique de la bouche pendant toute la vie.
11. Le dentiste peut donner une démonstration du brossage de dents, selon la méthode moderne de Stillman et expliquer le "timing" de brossage.
12. Corriger les conditions qui conduisent vers la maladie péridentaire:

a) Dépôts de tartre
b) Malocclusions
c) Mauvaises obturations ou absence d'obturations
d) Les habitudes vicieuses buccales
e) Nutrition inadéquate
f) Brossage des dents défectueux

13. Traiter les maladies péridentaires.
14. Insérer les prothèses après la perte des dents.
15. Dépister les lésions cancéreuses de la bouche promptement.

Ce plan représente un schéma-guide des soins dentaires à travers la vie d'un patient.[8]

Le programme d'éducation pour les enfants

L'école est l'endroit idéal où peuvent se répandre les idées modernes de la santé dentaire. Les sept années de séjour de l'enfant dans l'école primaire, c'est-à-dire de 7 à 14 ans, constituent un important stade de croîssance et de développement de l'enfant. La négligence de la santé dentaire pendant cette période de la vie de l'enfant se répercute sur toute sa vie. Voici l'exemple d'un schéma-guide pour les enfants, élaboré par les spécialistes de la santé dentaire, de Tennessee Health Teaching Guide.

Pour les classes de 1 à 3
Objectif:

1. Commencer à comprendre la nécessité des soins dentaires de ses propres dents.

Les activités et ressources:

2. Localiser la première molaire permanente avec abaisse-langue ou miroir.
3. Raconter l'histoire de la nécessité de la visite chez le dentiste.
4. Faire une démonstration de brossage de dents sur modèle.
5. Avoir une brève conversation sur le rôle néfaste du sucre.

Evaluation:

6. Vérifier si les enfants brossent les dents après les repas.
7. Vérifier si les enfants visitent leur dentiste.
8. Vérifier si les enfants ont peur du dentiste.
9. Vérifier si les enfants mangent des fruits entre les repas.

Pour les classes de 4 à 6
Objectif:

1. La compréhension du rôle de bonne alimentation pour la santé dentaire.
2. L'appréciation de la nécessité de bonnes dents et de leur soin.

Les activités et ressources:

3. Discussion d'un film projeté sur la santé dentaire.
4. Ecrire un résumé sur la relation entre le sucre et les dents.

Evaluation:

5. Vérifier si l'élève visite le dentiste tous les six mois.
6. Vérifier si l'élève consomme des fruits et s'il limite le sucre raffiné.

Pour les classes de 7 à 9
Objectif:

1. Inoculer la compréhension du problème de la relation entre les dents, la santé générale et l'apparence.

Les activités et ressources:

2. Organiser l'étude en groupe d'élèves sur le brossage des dents, la fluoruration des eaux potables et la carie dentaire. Les renseignements sont basés sur les pamphlets fournis par l'A.D.A.

Evaluation:

3. Vérifier si les élèves bénéficient de soins dentaire.
4. Vérifier si les élèves lisent la littérature concernant la santé dentaire.
5. Vérifier le genre des aliments consommés au cours du déjeuner.

Pour les classes de 10 à 12
Objectif:

1. Développer la compréhension de la nécessité des soins dentaires à travers la vie.
2. Développer des habitudes diététiques normales.

Les activités et ressources:

3. Faire écrire par l'élève sa propre histoire dentaire; par exemple, nombre de dents permanentes absentes et nombre d'obturations présentes.
4. Ecrire un résumé sur le sujet des dents mal-enlignées.

Evaluation:

5. Voir si l'élève porte un intérêt au problème de santé dentaire.[9]

Le programme pour les enfants d'age pré-scolaire

Les visites à domicile effectuées par les hygiénistes constituent une activité principale dans ce domaine. La surveillance dentaire et l'application topique de solution de fluorure de sodium s'avèrent une méthode de choix pour attirer les enfants de l'âge préscolaire vers les cliniques de santé dentaire.

Les recommandations suivantes sont à conseiller:

1. L'activité du Département de Santé
   a) visite des hygiénistes à domicile
   b) distribution de littérature d'éducation
   c) conférences pour les enfants dans les cliniques de santé
   d) examen périodique des dents
   e) organisation de campagnes de publicité par radio et télévision et journaux
   f) organisation d'expositions
   g) collaboration avec les sociétés dentaires
2. Formation de comités de la santé dentaire préscolaire, recrutés parmi les parents, qui ont pour but:
   a) l'organisation de la surveillance dentaire.
   b) le développement d'un programme d'application pratique de solution de fluorure de sodium par voie topique.
   c) motiver la nécessité des soins dentaires même avant l'âge de 3 ans.
   d) guider les parents dans la préparation de leurs enfants pour la première visite chez le dentiste.
3. *Les activités des jardins d'enfance*
   a) organisation de rencontres des mères avec les dentistes et les hygiénistes.
   b) discussions en groupe des problèmes de santé dentaire conduite sous la direction des dentistes et hygiénistes.[9]

La contribution de l'hygiéniste dans le domaine de l'éducation de la santé dentaire

En feuilletant les pages de "Journal of the American Dental Hygienist Association", on est impressionné de la contribution des hygiénistes dans le champ de l'éducation de la santé dentaire. La profession dentaire n'évalue pas suffisamment le rôle de l'hygiéniste dentaire dans les programmes de service de santé dentaire. Il faudrait multiplier le nombre des hygiénistes dentaires, car elles rendent des services inestimables dans la pratique privée et dans les services de santé où elles remplissent la besogne administrative sous la surveillance des dentistes. Les hygiénistes sont d'excellentes éducatrices de santé dentaire, en s'occupant surtout de l'aspect préventif de la dentisterie chez les enfants.[9]

Aspect financier du traitement dentaire

La profession dentaire se rend compte de l'importance, pour la santé, de traitements précoces et réguliers de la maladie dentaire en propageant l'idée des soins systématiques parmi la population. La fréquence des soins dentaires est en rapport direct avec la possibilité financière de la population. La dernière décade a vu naître différents plans de financement des services médicaux et dentaires par les "Assurances-Santé et Maladie". Il existe actuellement aux Etat-Unis et au Canada différents plans s'assurance-maladie qui financent les dépenses d'hospitalisation et d'intervention chirurgicale.

L'étude du programme d'Assurance Santé-Dentaire pose un problème unique à la profession dentaire. Le programme parallèle existant d'assurance - maladie peut nous guider dans l'élaboration d'un plan d'Assurance Santé-Dentaire.

Actuellement, une mince couche de la population bénéficie d'un plan d'assurance dentaire. Les assurances actuelles ont un spectre de remboursement insuffisant pour le traitement dentaire. L'assurance populaire "Croix Bleue" rembourse le prix du traitement dentaire seulement dans les cas d'accidents qui nécéssitent l'hospitalisation.

L'Association dentaire canadienne a proposé un plan-essai de paiement anticipé pour les soins dentaires (prepayment dental care) pour les enfants jusqu'à l'âge de 6 ans. Chaque année, après adoption de ce programme, les enfants

de 3 ans seront éligibles de participer dans ce plan.

Les soins dentaires courants, excepté l'orthodontie, les inlays, les couronnes, les ponts et pièces de prothèse, seront donnés par les dentistes accrédités. Au début, le membre assuré doit contribuer la somme de $1.00 à titre d'inscription et ensuite payer une somme mensuelle allant de $1.50 pour les enfants de 3 ans et $2.50 pour les enfants de 6 ans. Un tarif a été suggéré qui obligerait le dentiste participant de ne pas demander une somme additionnelle pour les soins donnés. Selon ce plan, le défauts accumulés seront relativement minimes, car ce plan commence à opérer sur un groupe d'enfants jeunes. Selon ce plan, les soins dentaires engloberont la dentition temporaire pendant les premières années de son fonctionnement.

L'attitude de l'Association dentaire américaine

L'Association dentaire américaine a pris une part active par l'intermédiaire de son Conseil de la Santé Dentaire, dans l'étude des différents plans-essais volontaires d'Assurance Santé Dentaire. En 1953, le Conseil de la Santé Dentaire a recommandé au "House of Delegates" de l'A.D.A. d'adopter un programme de dix points, connu sous le nom de "Principles for Determining the Acceptability of Dental Repayment Plan" qui a été élaboré par le Conseil:

1. Le plan doit être développé sous les auspices et conseils des représentants de la Société Dentaire.
2. Le plan prévoit des soins dentaires de haute compétence et qualité.
3. Le dentiste en administrant les soins à son patient doit disposer d'un libre choix de traitement à conseiller à son patient.
4. Le patient et le dentiste jouissent d'un droit de libre choix, le premier de son dentiste et le second de son patient.
5. Le paiement d'honoraires s'effectue directement au dentiste.
6. Le règlement concernant le fonctionnement du plan doit être élaboré par les représentants de la profession dentaire.
7. Le tarif établissant les honoraires pour les prestations doit être déterminé par les représentants de la profession dentaire.
8. Le plan doit être spécifique, en détaillant clairement le genre et la quantité de soins à procurer.
9. Une base saine commerciale doit être adoptée afin d'assurer un coût peu élevé des frais d'administration du plan.[9]

Conclusion

Les principes recommandés par le Conseil de Santé de l'A.D.A. nous fournissent une base acceptable d'un plan d'Assurance de Santé Dentaire. Chaque plan d'assurance proposé doit être suffisamment attrayant pour les deux parties en cause — l'assuré et le dentiste — pour être accepté.

L'opinion publique canadienne s'impatiente et désire la réalisation sans délai d'un plan d'Assurance Santé-Dentaire sur l'échelle nationale.

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Nouvelles de l'Association

Déduction possible de l'impôt sur le revenu de sommes versées à un plan approuvé de retraite, par J. T. Staddon, administrateur du Plan d'Assurance-Pension de l'A.D.C.

La livraison d'avril du Journal de l'Association dentaire canadienne (page 231) mentionnait des renseignements au sujet de la loi présentée par le Ministre des Finances pour amender la Loi de l'Impôt sur le Revenu de façon à ce que les primes payées pour un plan approuvé de retraite puissent être déduites du revenu pour fins d'impôt. La loi a été votée le 12 avril 1957 et compte à partir du 1er janvier 1957.

Il y a encore plusieurs questions techniques à régler entre les compagnies qui s'occupent de plans du genre et les ministères concernés par ces problèmes.

Toutefois, le projet de loi contient suffisamment de détails et assez de principes pour donner une idée assez exacte de ses avantages possibles et de la procédure à suivre. Déjà le bureau d'administration du Plan d'Assurance-Pension de l'Association dentaire canadienne a fourni aux dentistes des renseignements qui donnent une idée générale de l'offre du gouvernement; mais à cette époque, il ne lui était pas possible de faire connaître plus de détails et de répondre à des questions précises facilement prévisibles.

Comme on le sait, un individu peut soustraire de ses revenus le montant versé durant une année à un plan approuvé de fonds de retraite jusqu'à un maximum de 10% de son revenu, ou jusqu'à une somme totale de $2,500. Voici, en quelques mots, la concession que le gouvernement consent au contribuable. Cette concession prend beaucoup d'importance pour ceux qui doivent prévoir seuls pour leur retraite, à même leur revenus propres.

Pour être accepté, il faut qu'un plan de fonds de retraite remplisse les conditions suivantes:

1) Un tel plan ne doit pas contenir de clauses qui permettent des emprunts à même le capital versé.

2) Un tel plan ne doit pas avoir de valeur de rachat, quoique le gouvernement permette une certaine valeur de rachat à condition que le bénéficiaire dans son rapport d'impôt de l'année où il a reçu cette somme rajoute celle-ci à son revenu et paie l'impôt approprié; mais le taux d'impôt auquel cette somme est sujette ne doit jamais être moins de 25%.

3) Un tel plan ne peut jamais être transférable, en ce sens qu'il ne peut jamais servir comme garantie collatérale dans une banque ou toute autre organisation de finance pour un emprunt.

4) Les bénéfices éventuels du contrat doivent servir à l'achat de rentes viagères pour le souscripteur et ces rentes doivent commencer à être payées avant qu'il n'atteigne l'âge de 71 ans. Ces rentes, toutefois, peuvent être sujettes à une période garantie qui n'excède pas 15 ans et peuvent faire l'objet d'une clause qui laisse au survivant d'un couple marié les bénéfices de la rente.

On peut ajouter à un tel plan approuvé de retraite d'autres bénéfices tels le paiement de tout le capital en cas de mort prématurée, la protection du revenu, pour la famille, la possibilité de maintenir la même protection tout en ne payant pas de primes dans un cas d'incapacité, etc., mais la partie de la prime qui couvre ces bénéfices additionnels n'est pas déductible. Mais en fixant son plan de retraite, il en coûte moins de s'assurer ces diverses protections en les greffant à lui.

Donc, tout plan d'assurance-vie ou tout plan de rentes viagères, qui a une clause d'éparque peut être modifié de façon à ce qu'il convienne à l'amendement de la loi de l'Impôt sur le Revenu, qui accorde les déductions mentionnées plus haut. On demande que l'approbation de tout plan soit accordée à un individu quand il fait son rapport d'impôt sur le revenu et qu'il y joint son reçu initial pour les primes qu'il a payées. La compagnie d'assurances lui fournira ce reçu et lui indiquera les sommes qu'il peut déduire. Par après, un reçu annuel suffira à justifier la déduction de l'impôt.

Comme les sommes payées à un fonds de retraite cessent d'être imposables, il est normal que les rentes que l'individu recevra, quand il prendra sa pension, soient considérées comme un revenu et soient taxables. Cet arrangement se comprend facilement pour quelqu'un qui commencera en 1957, par exemple, à se constituer un fonds de retraite; tout le montant de ses primes peut être déduit de son revenu. Mais, si une personne paie déjà des primes du genre depuis quelques années et qu'elle n'a pu soustraire cet argent de son impôt, de quelle façon ses rentes seront-elles affectées? Ces cas et d'autres sont supposés être réglés par l'amendement à la Loi de l'Impôt sur le Revenu, mais on ne connait pas encore les modalités qui règleront ces circonstances particulières. On a suggéré au gouvernement de ne pas taxer la partie des rentes qui seront perçues et qui correspondent aux primes qui n'auront pas été déduites du revenu. Ainsi, théoriquement, ceux qui avaient déjà un plan de fonds de retraite

ne perdront rien et ne souffriront pas de préjudice financier en convertissant leurs contrats actuels pour un plan approuvé de fonds de pension. Il y a un autre point important à remarquer. Plusieurs membres de l'A.D.C. prennent des contrats qui leur donneront des rentes fixées à l'avance à l'âge de 55 ou 60 ans. Il peut arriver que ces personnes, quand elles seront rendues à l'âge où leurs rentes devraient normalement leur être payées, seront encore en plein exercice de leur profession et se sentiront encore capables de travailler pour plusieurs années à venir. Comme leurs rentes à ce moment viendront grossir leurs revenus et, par conséquent, alourdir leur impôt, il se peut qu'elles paient un montant équivalent et même supérieur à celui qu'elles ont épargné quand elles ont déduit leur primes sur leur revenu annuel à l'époque où elles constituaient leur fonds de retraite. Dans ces cas, il n'y a rien dans la loi qui les empêche de remettre à plus tard l'échéance de leurs rentes, à condition que ce ne soit pas plus tard que soixante-et-onze ans, comme le veut la loi; ainsi, ces personnes recevront une rente plus considérable sur laquelle elles auront probablement à payer un taux plus bas d'impôt. Voici deux exemples qui illustrent l'économie substantielle qu'un individu peut réaliser durant la période où il paie ses primes:

1) Un homme de 32 ans, ayant une épouse et trois enfants, gagnant un revenu de $12,000 par année, peut déduire un montant de $1,200 pour ses primes de plan de pension. L'impôt qu'il paie en moins se chiffre à $336.00, abaissant à $864.00 le coût annuel de sa pension, pour cette année. A mesure que son revenu augmente et que l'allocation à ses dépendants diminue, l'épargne qu'il réalisera dans son impôt augmentera en proportion.

2) Un homme de 55 ans, ayant une épouse et aucun dépendant, gagnant un revenu de $17,000 par année, peut déduire un montant de $1,700.00 pour ses primes de plan de pension. L'impôt qu'ill paie en moins se chiffre à $646.00, abaissant à $1,054.00 le coût annuel de sa pension.

On voit donc que les changements que le gouvernement vient d'apporter à loi de l'impôt sur le revenu peuvent profiter à presque tous les groupes d'âge et qu'ils assurent des avantages à placer 10% de son revenu dans un plan approuvé de fonds de retraite. Cet exposé succinct ne peut s'appliquer à tous les cas particuliers qui peuvent se présenter, mais il fournit aux membres de l'A.D.C. un aperçu général de ses grandes lignes. On peut demander des renseignements plus complets et solliciter des quotations en s'adressant au Bureau d'administration du Plan d'Assurance-Pension de l'A.D.C., Casier postal 70, Brockville, Ontario.

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Volume 23
Number 8
Toronto
August, 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

The General Dental Service—Nine Years After*

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If I were speaking in a foreign country, I have no doubt that I should extol to you some of the virtues of the General Dental Service within our National Health Service. For it is indisputable that it has some virtues, since it has brought dentistry to a very large number of our people who, prior to 1948, seldom visited a dentist except for emergency treatment. Last year, out of our population of approximately 50 million persons, there were rather more than 10 million completed courses of treatment given in our General Dental Service. This does not mean 10 million different persons, since many patients had more than one course of treatment during the year, while many children and young persons had maybe three or four courses of treatment in the year. This figure of 10 million takes no account of the school children who received their treatment through our school dental service, nor of those adults who received their treatment in hospitals, in the Armed Forces, from other Government Services or as entirely private patients. It is clear, therefore, that our General Dental Service is making a considerable contribution towards the dental health of our nation.

I am not, however, speaking in a foreign land, but amongst friends and with-

* An address to the Convention of the C.D.A.-W.C.D.S., Winnipeg, June, 1957.

Published simultaneously with the British Dental Journal.

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in the family of the Commonwealth, and there is surely no room for pretences amongst members of the same family. My wife and I will never forget, and can never repay all the warm friendship and hospitality that we have received in Canada, but I should certainly be ill repaying it if I pretended to you that all was well with our General Dental Service in Britain, and if I kept silent about some of the fundamental errors that we made in introducing our Dental Service.

The National Health Service in Britain has now been going for nine years, and some of the errors which are quite fundamental are becoming clearer as time goes on, and, as time goes on, are clearly more difficult to correct. Indeed, many members of the medical and dental professions feel that the only solution might be to tear everything up, and start again, but this is obviously impossible.

The greatest mistake that we made was in allowing the Health of the Nation to be mixed up with politics, and in particular Party Politics.

It would not be fair, however, to lay the entire blame for this on the politicians themselves.

Towards the end of the last war everyone in the country was agreed that when we returned to peace, there must be no return to the soul-destroying mass unemployment which followed the 1914-18 war, and lasted almost throughout the inter-war period. Various Committees were therefore set up by the Government to study the position, and in particular, there was one under Lord Beveridge which made widespread recommendations for what has since become known as the Welfare State. A comprehensive Health Service, free to all, was one of these recommendations. This suggestion seized the popular imagination, and the public certainly expected—almost demanded—that such a service should be introduced by the Government it then proceeded to elect.

As regards dentistry, Beveridge recognized the shortage of dental man-power, but, acting on the advice of another special committee under Lord Teviot, the newly-elected Government decided to include free dentistry for all within the National Health Service.

The British Dental Association did not agree with this policy. We suggested that the first essential was to secure an expansion of the existing School Dental Service to bring the number of dentists in it up to full strength. Regarding the adult population, up to that time, only workers under a certain income limit had been covered by National Insurance, and not even all of those were entitled to have dental treatment. We suggested that as a first step, all persons below the old Insurance income limit, together with their wives and families should be entitled to receive dental treatment. Unfortunately, a profession that was conscious of its lack of numbers, and which was therefore advising caution in not throwing open the scope of the Service too wide at the beginning, was, in the political atmosphere then prevailing, promptly labelled reactionary and obstructive, and its advice was entirely disregarded. It is only fair to say that it was known that in those old Insurance Societies which provided 100% of the cost of dental treatment for their members, only 7% of the membership had ever sought treatment in any one year. From this the Government argued that it is not the economic factor which prevented people from obtaining dental treatment, but rather that the population was just not interested in its teeth. This proved to be quite a wrong view, and the Government completely under-estimated the demand for treatment, and therefore hoplessly under-estimated the cost. It was estimated that the cost of treatment for the first nine months of the Service would be £7 million —in fact it was £18 million. For the following financial year the estimate was £28 million, but the cost was £42 million.

Thus in July 1948 a free dental service, available to the entire population, came into effect, with results that are only too well known. With the economic barrier

completely removed, the public rush for dentistry began immediately, particularly amongst the denture wearing members of the community. Whether the denture was one or twenty years old, and whether it was comfortable or not, everyone thought that he was entitled to a new one and was determined to get one out of the State, even though subsequently it reposed in a drawer, while he returned to his old friend. The profession was completely overwhelmed with work, and was working to all hours of the day and night, and often seven days a week to try to meet the public demand. Waiting-rooms overflowed and queues formed in the street outside, while those dentists who stuck to their normal method of seeing patients only by appointment found themselves fully booked up for over six months ahead. Technicians too were quite unable to deal with the work sent to them by the profession, so that once a dentist had taken impressions for a patient, it might be months before he could actually insert the new dentures. Meanwhile, the cost to the country mounted alarmingly, and it became clear that the Government had made a mistake in ever introducing such a scheme. But in view of the public demand it dare not go back, but had to save its face somehow. What better scapegoat than the dental profession? Within six months the fees paid by the State had been reduced; within a further six months they had been reduced again, and in less than another year they had been reduced for a third time. In fact, during the nine years of the Health Service there have been no less than nine sets of Government regulations which have fundamentally altered the basis of a dentist's income, and only the two latest ones have altered it in an upward direction.

Within a year disaster had overtaken that section of the dental health service which was really the most important, namely the school dental service. This had always been both badly underpaid and understaffed, and it was not long before some 25% of school dentists had resigned from the salaried service and had started up on their own in the General Dental Service.

By 1951, the Government could no longer pretend that an entirely free service for everybody was either economically possible, or, considering the shortage of dental man-power, really in the best interests of the nation. A deterrent was therefore introduced in the form of a charge whereby a patient paid approximately 50% of the cost of any denture. A year later, following a general election, a Government of another political hue introduced a further deterrent in the form of a further charge, whereby an adult patient paid the first £1 towards the cost of treatment in addition to the 50% charge towards dentures.

Each party tried to make political capital out of the charges introduced by the other party, and, most grotesque of all, the party which had first found it necessary to introduce deterrent charges, and which was now in opposition, offered as a bait to the electorate at the next election the promise of the abolition of all charges, and the restoration of free dentures for everybody. Thus can the profession of dentistry easily be prostituted for the profit of party politics. Is it any wonder that at the end of nine years the dental profession in Britain is discontented, disillusioned, and bitter?

Strangely enough, despite the strongest urging from the profession, no Government has until recently considered trying to relieve the position by means of a campaign of Dental Health Education of the public. Following the recommendations of a recent Government Committee which was enquiring into the shortage of recruits to the dental profession, the Government is at last giving serious consideration to a campaign for dental health. But up to now the official view has been that it is better to let a man's teeth rot due to ignorance, rather than to educate him and teach him how to look after his teeth,

in case, in thus arousing his interest in dental health, he should seek consultation with an overworked profession.

As I have already stated, the National Health Service is making a considerable contribution towards the dental health of the nation. But how much better would it have been if it had started off on the right foot, and if, after nine years of working in the Health Service, the two professions of medicine and dentistry did not both find themselves at loggerheads with and completely exasperated by the conduct of the various parties that have been in power during those nine years. The atmosphere of suspicion and mistrust today between the two professions and the Government cannot possibly be to the benefit of the person whom all seek to serve — namely the patient.

Is it possible that we could have avoided this state of affairs? I believe that it it. In the first place our Health Service was introduced at the wrong time, when the political atmosphere was entirely unfavorable for cool and collected thought. It seems essential that such a service should be introduced in a calm political atmosphere, when reason and judgment can be given due weight, and are not overborne by political prejudices. Secondly, the keynotes to the position should surely have been *economics* and *dental manpower*. The public should never have been promised more benefits than the country could afford, or more than the limited dental profession could provide. It should have been realized that the Government and the dental profession were inter-dependent. On the one hand the Government could provide the money and the administration but they could not do the dentistry; on the other hand, the profession could provide the treatment, but not the money to pay for it, while some of its ideas on administration were possibly quite unworkable. The two should therefore have gone into partnership for the benefit of the public.

The Government, or for preference an all-party conference should have decided how much per year could be spent on dentistry over a long-term period, and at that stage the profession should have been called in to the friendliest consultation for its advice on the best way to expend this money with the greatest benefit to the dental health of the nation. Surely the unanimous decision of such a conference between the political parties and the profession must have been to concentrate at the beginning on treating the children of the country. Having started off with caution, the service could have been expanded to include adolescents, with the adult population coming in later, as more money and more dental manpower were available. Meanwhile, an intensive Government campaign of dental health education would have helped to reduce the need for treatment, and would perhaps have enabled the service to expand more quickly.

Maybe the position would never have been reached where there was a completely free Service for all, but is a completely free service for adults necessarily a desirable goal? Is it not better that the adult patient should always have some responsibility, so that he uses the service wisely, appreciates it, and is not so likely to abuse it?

If we could have had a service starting off with the fullest confidence and mutual trust between the politicians and the profession, each believing that the other was sincerely and solely concerned with seeing that the public got the best possible service, then the present feeling of unrest, insecurity and bitterness in the dental profession in Britain could never have arisen. For, in the final event, a really first-class, efficient and worthwhile service to the public can only be provided by a profession which is proud to be in that service, and which believes that in working in that service it is making a contribution not only to the public good, but also to the science and art of dentistry.

A Study of the Distribution of Nerves in Human Teeth

ROBERT RAPP*, J. K. AVERY** and R. A. RECTOR***

Although the problem of pain consistently has confronted the dental profession, research has yet to demonstrate the basis of the extreme sensitivity of the dental structures.

Several theories in explanation of the sensitivity of dentine have been postulated. One group of investigators expresses the opinion that pulpal nerves extend into the dentinal tubules or into the dentine itself and, thus, account for its sensitivity. Another group contends that neurofibrils do not extend into the calcified tissues but terminate on or among the odontoblasts. The latter investigators think that stimuli are received and conducted by the dentinal fibrils to the nerve endings among the odontoblasts.

The question of the innervation of the dentine has important clinical implicattions. More definite knowledge about the terminations of neurofibrils in the pulp and calcified structures of the teeth conceivably could lead to renewed and possibly redirected efforts toward control of pain. For these reasons, the present report concerns an investigation of the characteristics and distribution of nerves and neural endings in human, permanent teeth.

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Review of the Literature

Investigations of the innervation of the teeth are numerous. Many of the early investigations were hampered by the lack of technical refinements which are available today. Since most of these earlier reports were illustrated by drawings rather than photomicrographs, it is difficult to compare the results with recent reports. Brashear[4], in 1937, presented an excellent review of the literature on the research performed to that date. It, thus, is possible to limit the present discussion to a review of some of the more recent investigations of the innervation of dentine.

Of the studies in which nerves were noted in the dentine, the research of the following investigators has received much consideration. Bradlaw[2], Held and Baud[5], Philipp[9] and Powers[10] presented varying descriptions of the innervation of dentine. Bradlaw[2] noted beaded, looping neurofibrils positioned principally in the odontogenetic zone but with some fibrils passing into the dentine proper. Philipp[9] noted neurofibrils in the predentine but did not observe them extending into the dentine. He noted the fibres located in both intra- and extratubular positions, whereas Powers[10] noted them lying within the ground substance of the dentine where they terminated in end-bulbs. Held and Baud[5] described most of the neurofibrils as ending in contact with the bodies of the od-

ontoblasts by means of a definite metraterminal apparatus, whereas, other fibres penetrated the predentinal tissue and accompanied the odontoblastic processes into the dentine. Here they ended with a metaterminal apparatus close to the wall of the tubule.

Much research supports the opinion that nerves do not terminate in the dentine. Brashear[3] and Tiegs[12] presented similar findings of neurofibrils passing to the odontoblastic layer where they terminated. Tiegs[12] reported fibres running and branching between the odontoblasts and the dentine and terminating in definite end-organs on the Tomes' fibres, at the orifices of the dentinal tubuli and on the odontoblasts. Brashear[3] noted fibres terminating by free endings around the Tomes processes and among the odontoblasts. Neither of these investigators saw neurofibrils in the substance of the dentine proper.

Bernick[1] observed that some of the neurofibrils passed directly to the odontoblasts while others passed a short distance into the predentine and dentine and then returned to terminate among the odontoblasts by means of free neural endings.

Materials and Methods of The Present Study

Human, permanent, non-carious teeth of patients ranging in age from 10 to 60 years were obtained and immediately placed in a fixative consisting of 10 per cent chloral hydrate solution in 10 per cent formalin. The teeth then were sliced open by a water cooled carborundum disk to enable a more rapid and complete penetration of the pulpal tissue by the fixative. Decalcification was carried out in equal portions of 20 per cent sodium citrate and 50 per cent formic acid for approximately two weeks. After dehydration, the tissues were embedded in paraffin and sectioned at thicknesses ranging from five to 50 micra. After trial of several methods of impregnation by silver, the Powers' modification[9] of the Romane stain[10] was selected as the technique most suitable for this study. This stain, while not exhibiting an exclusive specificity for neural tissue, did differentiate to a large extent neural structures from other pulpal elements. The neurofibrils appeared deeply stained in contrast to the odontoblasts, their processes, fibroblasts and pulpal connective tissue fibres.

Several tests were carried out with the Powers' stain to determine the effects of varying certain constituents. The mordanting action of copper sulphate was tried at intervals of time ranging from one to 24 hours. It was observed that the optimal time to mordant the tissues with copper sulphate was eight hours. Longer periods of time did not improve the selective staining of neural elements appreciably. The tissues were incubated in the silver solution at intervals ranging from one to 24 hours. No improvement in intensity of the staining by silver was observed when the tissues were retained in the solution beyond 14 hours. The concentrations of the solution of ammonia also were varied. The effect of greater concentrations of ammonia was observed to increase the intensity of the staining. However, it also resulted in the staining of the background elements of the tissue and thus obstructed the view of the nerves. The optimum concentration of ammonia was found to be one per cent. Concentrations of oxalic acid ranging from one-half to two per cent were used to define the neural tissue. By the use of less concentrated solutions, it was possible to observe a more gradual darkening of the fibres than at the higher concentrations. Thus, the reaction could be stopped when sufficient differentiation of the nerves had occurred.

Findings of the Study

Large nerve trunks are located in the central part of the pulp chamber, Fig. 1. As these nerve trunks enter the coronal part of the pulp chamber, they branch into smaller groups of fibres which radiate peripherally toward the dentine, where they in turn break up to form a network of fibres, Figs. 2, 3. From this

FIGURE 1. Large nerve trunks centrally located in the pulp chamber. N, Nerve trunk; D, Dentine.

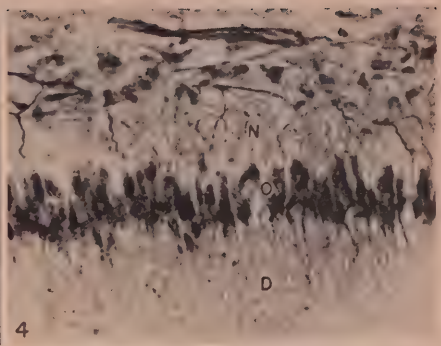

FIGURE 4. Nerves pass from parietal layer through the cell-free zone to terminate among the odontoblasts. N, Nerve fibres; O. Odontoblasts; D, Dentine.

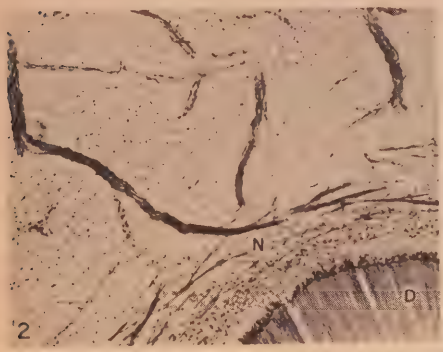

FIGURE 2. Nerve trunks pass to the periphery of the pulp where they branch and form a network of fibres. N, Network; D, Dentine.

FIGURE 5. A nerve branching in the cell-free zone and the odontoblast layer to terminate in a beaded ending at the border of the predentine. W, Weil's layer; N, Nerve P, Predentine.

FIGURE 3. Higher magnification of network of nerves at periphery of pulp chamber. N, Network or parietal layer of nerves, C Cell-rich zone; W, Cell-free zone of Weil; O, Odontoblasts; D. Dentine.

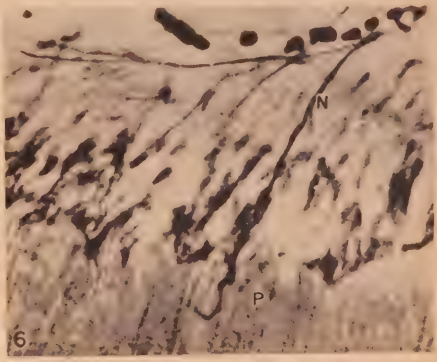

FIGURE 6. Neural fibril passing through the odontoblast layer to terminate in the predentine. The terminal portion of the fibre curves back towards the pulp. N, Nerve; P, Predentine.

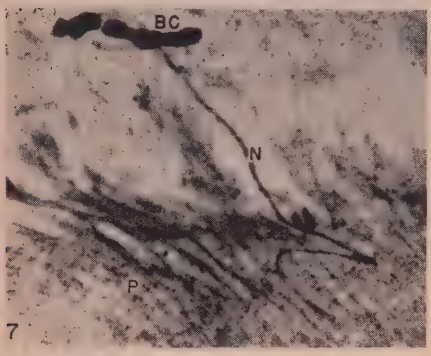

FIGURE 7. Nerve fibre terminating in the predentine. Ending appears to bend or loop back. BC, Blood cells; N, Nerve; P, Predentine.

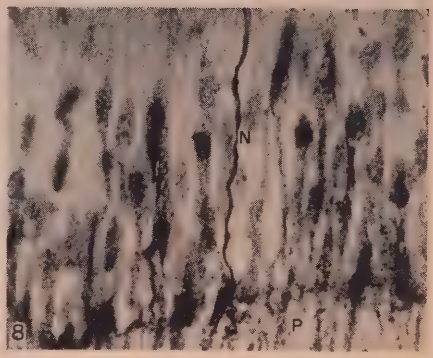

FIGURE 8. Nerve fibre terminating in predentine in beaded, curved ending. N, Nerve; Precetine.

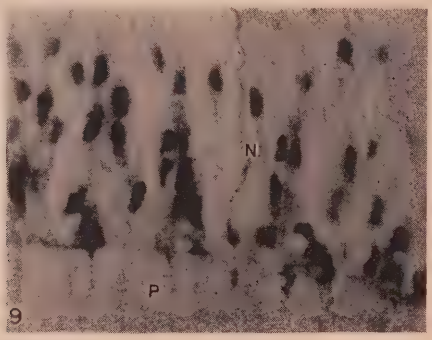

FIGURE 9. Nerve fibre terminating in predentine in beaded ending. N, Nerve; P, Predentine.

network or parietal layer of nerves, small neurofibrils pass peripherally through the subdontoblastic cell-rich zone and the cell-free zone of Weil. As the fibrils pass through this latter zone, they appear to lose their myelin sheaths and then terminate in the area of the odontoblasts, Fig. 4. These neurofibrils were not observed to terminate in any type of specialized endings in contact with the odontoblasts. While some of the neurofibrils branch and terminate among the odontoblasts, others pursue an undulating course between the odontoblasts and terminate at the pulpo-predentine junction, Fig 5. At irregular intervals along their length, some of the fibrils exhibited thickenings or beadings, Figs. 8, 9. Some neurofibrils were observed to pass between the odontoblasts, past the predentine border and into the predentine itself, Figs. 6, 7, 8, 9.

The neurofibrils appear in the predentine in either an extratubular position, Fig. 7, or in an intratubular position along with a Tomes' process, Fig. 6. Some fibres seem to end abruptly within the predentine matrix. The abrupt ending of the fibres may be due to a severing of that portion of the nerve lying above or below the plane of section of the tissue, Fig. 5. Many of the terminal portions of the neurofibrils found in the predentine tend to curve back toward the pulpal tis-

sue before they terminate, Figs. 6, 8. Some fibres in the predentine or dentine do not appear to have end-organs, Figs. 6, 7, while others appear to terminate in a definite beaded type of end-organ, Figs. 5, 8, 9.

Discussion of the Results of The Study

An investigation to determine the presence or absence of neurofibrils in dentine is confronted by a number of technical difficulties. Recognition of these factors is important in the interpretation of one's findings. The argyrophilic property of the precollagenous fibres of connective tissue of the pulp complicates identification of neural tissue. When treated with a silver stain, they often appear similar to the neurofibrils. Another difficulty arises due to the tortuous nature of the neurofibrils. Thinly cut sections facilitate clear observation of single fibres and their endings but result in a loss of continuity of the fibres since they pass above or below the plane of the section being studied. Thick sections provide a better opportunity to follow the course of the nerves as they bend and branch but thick sections present difficulties in the observation of fine structural detail. It also must be recognized that alterations of details of a tissue may occur during the procedures of fixation and decalcification.

The existence of a Plexus of Raschkow has been the object of much discussion. For example, van der Sprenkel[13], Wassermann[14] and Orban[8] have described such a plexus, while Philipp[9] has asserted that this structure does not exist. The most frequently encountered description of this structure is that of a layer or network of individual fibres beneath the zone of Weil. It has been termed the parietal layer of nerves.[8] The present study indicates that a network of fibres in this area does exist, Fig. 3.

The cell-free layer of Weil also is the subject of varying interpretation. Tiegs[12] has described it as an area of fibres of connective tissue. Wassermann[14] has called it the location of the plexus of Raschkow. Mummery[7] has referred to it as a zone of interlacing delicate connective tissue fibres, and Orban[8] has stated that it is an area of nonmedullated neurofibrils passing to the odontoblastic layer. The present study indicates that the layer of Weil is a narrow zone, free of cells and containing a network of fine fibres situated subjacent to the odontoblastic layer. A zone rich in cells borders the layer of Weil pulpally and next to this layer was noted the parietal layer of neurofibrils, Fig. 3.

The observation that no direct connection exists between the odontoblasts and the neurofibrils agrees with the report of Philipp[4] and of van der Sprenkel.[13] Bernick[1] has described free neural endings among the odontoblasts while Tiegs[12] and Held and Baud[5] have described a definite connection between the neurofibrils, the odontoblasts and the Tome's processes.

The findings of an innervated predentine compares with much of the other recent studies. Bradlaw[2] has stated that the major portion of the neurofibrils terminate in the odontogenetic zone and a lesser number in the dentine. Philipp[9] has observed fibres in the predentine following both an intra- and extra-tubular course and sometimes passing from one to the other. Of particular interest in the present study was the tendency of the neurofibrils to turn back towards the pulpal tissue before they terminated. It is possible, of course, that these fibres were sectioned before they reached their true termination. Bernick[1] has described a somewhat similar finding in which some of the neurofibrils passed into the predentine and dentine before returning to terminate among the odontoblasts. Powers[10] has noted neurofibrils passing into the predentine and dentine, some of which then returned to the pulp. In many instances the present study revealed that the neurofibrils ended in bulb-like terminations in the predentine. Powers[10] has described similar neural end-bulb organs in the predentine.

Studies of this nature always are confronted with the problem of differentiating neurofibrils from fibres of connective tissue. Several methods are helpful in the identification of neural tissue. Fine neurofibrils may be traced from their origin in large neural trunks. However, the tortuous course of the fibres often makes this observation difficult. Another method of identification is the use of a stain specific for neural tissue. Whereas the stain used in the present study was not entirely restricted to neural tissue, the neurofibrils were intensely stained with silver in contrast to the more lightly stained fibres of the connective tissue. Therefore, differentiation of neural tissue was possible and, in addition, the light staining of the tissues in the background facilitated orientation of the neurofibrils in respect to the dentine. The morphologic characteristics of the observed structures can be compared to the structure of known neural tissue. Thus, the long, delicate, beaded neurofibrils passing into the predentine can be distinguished from Korff's fibres which are thicker, not beaded, and fan out as they become incorporated in the predentine.[9]

The question arises at this point regarding the process by which the neurofibrils become incorporated in the predentine and the dentine. Comparison of the teeth from patients 10 to 60 years of age indicated that more nerves were present in the predentine of the older teeth. A possible explanation of this finding is that the neurofibrils, which formerly existed among the odontoblasts, were included in the predentine as it was laid down in a pulpal direction. Why nerves are not seen to a greater extent in the dentine also is of interest. It is possible that the dentine contains more nerves than are observed, but because of the structural density of the dentine the neurofibrils become masked. Again, it is possible that the differing chemical composition of the predentine and dentine facilitates the uptake of the silver stain by the nerves in the predentine but inhibits it in the dentine. A further explanation may be that atrophy of the nerves in the dentine occurs because of the remoteness of a nutritional supply.

The explanation of the extreme sensitivity of dentine still is undetermined. It is improbable that the relatively few neurofibrils observed in the predentine can account for the extreme sensory perception often encountered. Unstained neurofibrils which may be present in dentine may function in this respect or the Tomes' processes could conduct impulses to the odontoblasts and adjacent neurofibrils. In view of the highly speculative nature of these explanations, it is probable that a still unexplained mechanism exists. Following the morphologic demonstration of nerves in teeth, studies should be initiated to demonstrate the presence or absence of chemical substances which are known to be associated with the transmission of neural impulses. The localization of such substances would help to explain the transmission of sensation through the ground substance or tubules of the dentine from the dentinoenamel junction to the pulpal neurofibrils.

Summary

An investigation of the distribution of nerves and neural endings was carried out in human, non-carious, permanent teeth using the Powers' modification of the Romane's method of silver impregnation.

Large neural trunks were traced from the apical foramina to the pulpal chamber where they branched to form a subodontoblastic network of fibres. Most neurofibrils passed from this network through the cell-free zone of Weil where they lost their myelin sheaths and terminated among the odontoblasts. No neural endings were noted on the odontoblasts or on their protoplasmic processes. A few fibres were found to arise from the subodontoblastic network and enter the predentine for a short distance. Some of these fibres followed an intratubular

course while others appeared to be positioned in the matrix of the predentine between the tubules. The terminal portions of the neurofibrils showed evidence of looping back toward the pulpal tissue. Some fibres terminated in bulb-like endings, whereas others terminated in free endings.

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The Changing Picture Of Professional Education*

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On first viewing, you might consider it strange and presumptuous for me, a physician, to talk to you, a group of highly skilled dentists, on the subject of professional education since, inevitably, the greater part of my presentation will be related to the training of dental students and their activities subsequent to their graduation. If I need to justify my presentation I will attempt to do it on two basic premises. Quite frankly, I don't think I need to do this preliminary build-up, I think you will accept my remarks in the spirit that they are given—a sincere attempt to be helpful, a viewpoint from outside your profession intended only to benefit your welfare and that of the people you serve.

My specialty of public health has given me the privilege of long, intimate and most stimulating contact with the dental profession. Prior to World War II, I was so fortunate as to be associated with the W. K. Kellogg Foundation in Battle Creek, Mich. You all know of their long interest in the welfare of dentistry sparked originally by their President, Dr. Emory W. Morris and ably carried on by the Director of their Division of Dentistry, Dr. Philip E. Blackerby, Jr. My wartime service with the R.C.A.F. was, I think, the event that really shocked me into an awareness of the tremendous problem that dental ill-health presented to us. My

* Based upon an address given to the Associated Gold Foil Study Clubs, Vancouver, B.C. May 3, 1957.

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seven year period as a county health officer in Ontario from 1945-1952 was, again, much involved with the field of dentistry. From the beginning, I had available to me the services of a public health trained dentist and, at about the time I left, the orthodontic research project at Burlington was begun. During that period, I became associated as an occasional lecturer with the Faculty of Dentistry at the University of Toronto and provided field experience for their students.

Since my arrival at the University of British Columbia in 1952, I have found myself working closely not only with the practising dentists but also with the problems involved in extension of dental training facilities to this province. My efforts in the campaigns directed toward fluoridation of communal water supplies have been not only vigorous but extremely vocal. At the present time, I am faculty advisor to pre-dental students in this university. The most satisfying and interesting activity that has come my way is the planning directed toward the formation of a Faculty of Dentistry in this university.

In 1951, the Senate of the University of British Columbia appointed a committee to enquire into the desirability of the formation of a Faculty of Dentistry. In 1952, that committee presented its report. It was agreed that a Faculty of Dentistry was a desirable addition to this university but suggested it be held in abeyance until the Faculty of Medicine, begun only in 1950, had an opportunity to become solidly established. In 1953, a significant conference was held in Saskatoon attended by the presidents of the four western Canadian universities, representatives of the dental profession and representatives from the provincial and federal governments. This conference was financed by the W. K. Kellogg Foundation. The finding of this conference was that additional training facilities for at least 50 graduates per year were needed[1]. In 1953, our own committee was reactivated and we reported to senate in 1956. For our investigation we were very privileged to obtain the services of Dr. John B. Macdonald who, at that time, was the Director, Division of Dental Research, Faculty of Dentistry, University of Toronto. His report [2] is a classic. The demand for copies has been amazing, and we are now considering a third printing of the report. I would commend it to your close attention. Without apology, I would propose to refer freely to this report in my presentation since his philosophy of dental education is identical with my own.

Thus, I hope I have demonstrated to you that I have, over the years, by my interest and activity, justified any remarks I may have to make concerning the subject of dental education.

My second reason for considering that a physician has some right to talk about dental education is that I believe our problems and our aims are inextricably bound up together and that it is to our mutual advantage to seek closer integration and co-ordination between our two professions. As you know, until 1840 on this continent, dentistry was a part of medical training and the first real division with separate training facilities for dental students at university level came in that year with the establishment of the Baltimore College of Dental Surgery. It would be futile, at this stage, to go into the reasons for this separation of medical and dental training. The inescapable fact is that it did occur and the gulf separating us has, over the years, widened rather than narrowed. To many of us, in both professions, this is a tragic and unnecessary state of affairs and the time is long overdue for a real effort to bring us closer together again. I would hasten to emphasize that this does not mean medical dominance of the dental profession. Rather, we firmly believe that a closer integration can be of mutual benefit while still retaining the identity of each. It resolves itself down to this simple fact; each of us is interested in the health of man; he cannot be divided

into separate anatomically designated compartments; his oral health is manifestly part of his total health. Thus, it would seem an obvious fact that each of us must have a better knowledge of our two professions if we are to achieve maximal health for our people. This, I consider, is worth thinking about since the achievement of maximal health for our people is the only justification for our professional existence.

As I have already referred freely to 'professions', perhaps it would be wise to define just what I mean by that term. Dentists and physicians are considered to be 'professional men'. However, in addition to being members of learned professions they have certain attributes which distinguish them from other professional men such as lawyers, engineers, architects, etc. The difference, of course, is that we are members of the 'healing professions'. This membership in the healing professions gives us many unique privileges but also many additional responsibilities. We have all seen, in recent years, the ever-increasing encroachment of the technician into the field of the professional man. If we value our position, we would do well to take a long and critical look at ourselves and make sure that we can, in fact, make a contribution above and beyond that of the technician. If we sit back with a complacent attitude feeling that we are unique and invulnerable we may have a rude awakening and we will have no one to blame but ourselves.

What does distinguish the professionally trained man from the competent technician? In many instances, they may even do the same work but there is a very fundamental difference between them. This is best summed up in the preface to the Macdonald Report written by Dr. Norman A. M. MacKenzie, President of the University of British Columbia:

> "Even more important than the wealth of detail that this report contains is the soundness of Dr. Macdonald's philosophy — that dental education is much more than knowing 'how'; it is also understanding 'why.' "

To reinforce Dr. MacKenzie's opinion, consider that of Dr. Sidney Smith, the President of the University of Toronto who says, [3]:

> "Dentists must be prepared to assume the full responsibilities of public practice as soon as they graduate; therefore, a dental school must ensure that every graduate is competent and worthy of public confidence. At the same time, a good dental school will never be satisfied to produce artificers and gadgeteers. Professional insight, interest in research, training in basic sciences and receptivity to new advances are needful."

Actually, there is nothing I can add to the statements of these two distinguished educators; they have summed up most admirably what, in my opinion, are the problems that face dental education today. What I will try to do is to give you my own opinions as to how these ideals may be best achieved. I am fully cognizant of the fact that there are certain important differences in the basic objectives of the education of the dental student as contrasted to the medical student. As President Smith has noted, you must have your students, upon graduation, at the level of technical competence so that they may go immediately into practice whereas our students will all take at least a year, and the vast majority a great deal more, of postgraduate training. This, I think, does not invalidate the basic objectives stated by President Smith. It is, rather, a question of achieving a proper balance between the 'how' of technical competence and the 'why' through training in the basic sciences, interest in research and the other fields which, in my opinion, are not receiving adequate emphasis at the present time.

My experience is, obviously, mainly concerned with the problems of medical education. However, a brief look at the changing picture in medical education will serve well to point up some of the features that are directly applicable to dental education.

The most constant factor in medical education is its continuous change. In the full sweep of history the apprenticeship system of medical education is a relatively recent phenomenon but no one would suggest that it would now be adequate. The content of undergraduate teaching I received 20 years ago would be but an ill preparation for the new graduate of to-day. The fundamental truths remain but the good medical school is constantly changing its curriculm content and teaching methods to keep abreast of the great new advances. If one looks at the history of the teaching of medicine on this continent certain milestones stand out in our century. Welch, Osler and their group at Johns Hopkins University at the beginning of the century set a pattern that remained up until the famed report of Abraham Flexner in the 20's which guided medical education until after World War II. Early in the 1950's, medical schools in the United States and Canada began to look with a critical eye at their curriculum content and teaching methods. It had become obvious that no one could hope to cover the tremendous sweep of medical knowledge at the undergraduate level and that some type of selectivity was necessary in the material that could be presented. This ferment of discontent and self-criticism grew apace and we have seen many brave trials with newer methods at such schools as Harvard, Cornell, Western Reserve, etc. McGill University has recently announced a new medical curriculum after several years of intensive study. In our own school, after six years of teaching, we have spent the last year in an intensive study of a possible revision of our curriculum.

Just because a thing is new it is not necessarily good. On the other hand, just because something is old and hallowed by precedent it does not inevitably follow that it is the best. The changes I have cited above are healthy and significant. They are a result of a realization that we cannot stand still, that we must either go forward or slide back, that we must adapt ourselves to newer knowledge and changing conditions. In this process of change we must maintain a constantly critical attitude; we must not accept something just because it is new, it must also be better. However, we must always maintain a flexible attitude, we must be willing to change if something is definitely better.

What do we expect to accomplish in the undergraduate education of the medical student and, by inference, what should you aim at in the training of the dental student? There are many statements available in this regard but I like the recommendations made by our own committee in this university. I think they apply equally well to the dental student. Our committee has listed six basic objectives for undergraduate medical education. These are:

i. To impart a body of knowledge.
ii. To develop skill in the collection, assembling and interpretation of data.
iii. To convey an understanding of the scientific method of thought and practice.
iv. To cultivate habits of self-education.
v. To foster a spirit of moral and social responsibility.
vi. To promote the development of personal maturity.

They feel that if these six objectives can be attained we will produce a graduate who has acquired the basic knowledge and habits of thought which will permit him to pursue a career in any of the avenues of medical practice, teaching, administration or research.

You might reasonably say that all of this may be of interest to medical teachers but has little or no application to the problems that are faced by dental schools. I cannot agree with you. I believe that these and similar fundamental principles apply equally well to the teaching of dental students. I would agree that a different emphasis may be needed but the future dentist requires this type of training just as much as the future physician does. As I noted above, I have no quarrel

with the contention that dental students must spend much more time on technical procedures than do medical students but I am afraid that, in certain schools, this emphasis on technical excellence has almost crowded out true professional training. What must be attained is a better balance between these two aspects of training for the undergraduate dental student.

There are many different approaches I could take to illustrate the changes that I feel are required to achieve this desired balance but in this brief presentation I would propose to concentrate upon two matters referred to by President Smith; interest in research and training in basic sciences. By inference, what I have to say about these two aspects of the subject can be applied equally well to dental education as a whole.

What is the status of fundamental research in dentistry in Canada to-day? One answer to that question is the utilization of funds from the Dental Committee of the National Research Council since that body is the major financial granting body for dental research in this country. If you examine their grants you will find that the vast majority of the funds allocated are going to basic science departments in medical schools and a relatively small proportion to dental schools. It is also of interest to note that the chairman of that committee is a physician and not a dentist. The fact is that he is the most active man in Canada in research concerning physiology of bone. To the best of my knowledge, only one dental school in Canada has an organized division of dental research. If one examines the dental literature, one cannot but be impressed by the lack of reports on fundamental research. It is true that there are many published articles on newer and more improved techniques directed toward the repair of damage already done but how many papers does one see on the 'why' of these conditions? Basic fundamental research is the life blood of any profession. There is a great need for curious individuals with enquiring minds who will not be content to assume that dental disease is inevitable but want to know why these things happen. It isn't a matter of lack of funds. Money for research is available or can be obtained. What is needed is an intellectual curiosity directed toward unlocking the secrets of some of the problems that have plagued us from the beginning of time. Somehow this thirst for fundamental knowledge must become part of the undergraduate training of every dental student. I am convinced that this approach will eventually pay rich dividends.

My second point is with regard to the teaching of the basic health sciences. You all know the two approaches used in most schools today. At one extreme, you have complete duplication of departments in medical and dental schools with no attempt at co-ordination or integration; at the other, you have medical schools teaching basic sciences to dental students with little or no appreciation of their special needs or interests. I have seen glaring examples of both of these in the United States and Canada. I don't think that either of them is good enough. I fail to see that there is any fundamental difference between the basic teaching programme required in any of these subjects whether it be for medical or dental students. It is true that the emphasis may be different but so long as we both deal with the same animal, man, I believe that there must be developed a coordinated and integrated approach to the teaching of the various basic health sciences; anatomy, bacteriology, biochemistry, pharmacology, physiology, etc.

I could go on and develop the reasons why I think that there should be closer integration in clinical teaching, in preventive medicine, in biostatistics, etc., but I think what I have already said about research and the teaching of basic sciences will serve to illustrate what I mean.

What can we do about it? To me the answer is contained in the report written by Dr. John B. Macdonald to which I have

referred so often. We, in the University of British Columbia, are convinced that his planning for the new Faculty of Dentistry is sound and when it comes into being we will follow his broad recommendations. Prior to the establishment of the Faculty of Dentistry, a new basic sciences building will be built. This building will serve the basic science teaching needs not only in medicine and dentistry but also in other health sciences which may be established in the university in the future. We might use physiology as an example. There will be but one Department of Physiology. Medicine and dentistry will share its facilities, costs and staff. The teaching of physiology for dental students will be a matter for mutual decision between the department head and the Deans of Medicine and Dentistry. Similarly, the research activities of the department will become an integrated entity serving both professions equally well. No university can afford the needless duplication of departments. It is a waste of money and, even worse, it is a tragedy when one attempts to put into separate compartments different aspects of the same subject which should be treated as a whole. The teaching staff of the Faculty of Medicine are enthusiastic about this approach and their co-operation is assured.

I have referred to the Flexner Report and the tremendous influence it had on the teaching of medicine. I am convinced that, in the years to come, the Macdonald Report will attain equal fame. If we follow his recommendations directed toward an increasing emphasis on basic research and a closer co-ordination between medicine and dentistry in both the pre-clinical and clinical teaching areas we cannot help but strengthen the position of both professions.

In looking at the references I have cited, it is of interest to note that they are all from university sources; Saskatchewan, Toronto and British Columbia. I suppose some might claim that this is typical ivory tower philosophy, that it comes from one who has no concept of the practical problems of clinical practice. That is just not true, my record speaks for itself. Throughout my career I have always identified myself with the clinical practitioner whether he be medical or dental. I fully realize that, in the last analysis, the clinical practitioner is the really important person in both professions, the rest of us exist so that he may be properly prepared and trained and so that he may be given the tools to adequately treat disease and, more importantly, preserve and promote the health of our people. The universities, in co-operation with the practitioners, have the grave responsibility to see that this preparation is the best possible.

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A limited number of sound teeth from young patients were cut by conventional methods, and comparable teeth were cut by an ultrasonic cutting device. The cavities were filled with gutta-percha and the teeth were extracted 6 days, 12 days, 6 weeks and 9 weeks after preparation. The microscopic findings within the pulp revealed no difference in the tissue response to the cavity preparations with the two forms of cutting devices.

Journal of the American Dental Assoc.
Vol. 55, No. 1, July 1957

Fluoridation and the Supreme Court of Canada

On June 14th, 1955, the Municipality of Metropolitan Toronto passed By-law No. 278 which ratified and confirmed a report of the Works Committee recommending that the Commissioner of Works be authorized to proceed to fluoridate the Metropolitan water supply.

The Village of Forest Hill, one of the thirteen area municipalities, however, contended that Metro Council was exceeding its authority as designated in Section 41 of the Municipality of Metropolitan Act of 1953 and commenced litigation. In a judgment delivered by Mr. Justice F. J. MacKay, Forest Hill's application was dismissed. The Appeal Court of Ontario later, in a unanimous judgment, reversed the order of Mr. Justice MacKay and directed that the By-law be quashed.

Metropolitan Toronto then appealed to the Supreme Court of Canada to reverse the judgment of the Appeal Court of Ontario and to restore the order of Mr. Justice MacKay. Metropolitan Toronto, as appellant, was represented by Mr. Howard Manning, Q.C. and Forest Hill Village, as respondent, by Mr. John J. Robinette, Q.C.

The appeal was lost on the basis of a five to two division among the seven members of the Supreme Court of Canada, participating. The Chief Justice, Patrick Kerwin, and Mr. Justice Locke would have granted the appeal but Mr. Justices Rand, Taschereau, Cartwright, Fauteux, and Abbott dissented and the appeal was dismissed, with costs throughout.

The following is the transcript of the reasons for judgment, and although there is, as would be expected, certain repetitive sections, each judgment is given in its entirety.

EDITOR.

MR. CHIEF JUSTICE PATRICK KERWIN:

By leave of this Court the appellant, The Municipality of Metropolitan Toronto, appeals from a judgment of the Court of Appeal for Ontario reversing that of F. G. MacKay, J. A., and quashing the appellant's By-law No. 278, passed June 14, 1955. By The Municipality of Metropolitan Act, 1953 (c. 73 of The Ontario Statutes of 1953), hereinafter called the Act, the inhabitants of the Metropolitan Area were constituted a body corporate; the respondent, the Corporation of the Village of Forest Hill, is an "area" municipality within the limits of the Metropolitan district. The Council had previously adopted report No. 8 of its Works Committee recommending that the Commissioner of Works be authorized to take the necessary steps to undertake the fluoridation of the Metropolitan water supply and by By-law No. 278 that action was ratified and confirmed. Clause 2 of the By-law provides:—

> "2. That the said Commissioner of Works and all other appropriate officials of the Municipality be and they are hereby authorized and directed to take the necessary steps, forthwith, to undertake the treatment of the Metropolitan water supply by fluoridation and to obtain all approvals required by statute for the installation of the equipment necessary for such treatment."

Part III of the Act is headed "Metropolitan Waterworks System". By virtue of the earlier provisions of this Part the appellant became a provider of water at the wholesale level to the area municipalities. Then comes the important section, s. 41:—

> "41. The Metropolitan Council may pass by-laws for regulating the time, manner,

extent and nature of the supply of water from its waterworks system, and every other matter or thing related to or connected therewith which it may be necessary and proper to regulate in order to secure to the inhabitants of the Metropolitan Area a continued and abundant supply of pure and wholesome water, and to prevent the practising of frauds on the Metropolitan Corporation with regard to the water so supplied."

In these proceedings the Court is, of course, confined to the material filed so far as it may be relevant. On behalf of the appellant an affidavit was filed, sworn to by Professor Joslyn Rogers. Professor Rogers was a member of the Association of Professional Engineers and a graduate of the University of Toronto in Chemistry; he had been the Professor of Analytical Chemistry at the University from 1918 to 1954 and was a Toxicologist of over forty years experience and was currently practising as a Consulting Chemist. From his knowledge and experience he was able to state that chemically pure water does not occur in nature and cannot be produced artificially except in small quantities and with considerable difficulty and that, accordingly, water is classified as pure if it is suitable for human consumption and agreeable in taste, smell and appearance. Paragraphs 4, 5 and 6 of his affidavit read:—

"4. All natural waters contain minerals and such waters would not for that reason alone be classified as impure if the quantity of minerals present does not render the water unpleasant to the senses or prejudicial to health.

"5. Water containing fluorides in concentrations of up to two or three parts per million, which occurs naturally in many parts of North America, is not considered impure because of the presence of the fluoride. If the fluoride was introduced mechanically the water would still be considered pure as the ion added is the same in both cases and is offered to the human body in the same state.

"6. To confirm my opinion respecting the classification of water I would refer to the 5th Edition of 'The Examination of Waters and Water Supplies' by Thresh, Beale and Suckling at pages 84, 85, 86 and 87 in the Chapter entitled 'What Constitutes a Pure and Wholesome Water' which accurately represent my views."

As he indicates an examination of the pages of the book referred to confirms his opinion.

While it is notorious that chlorine is added to many water supplies, it is argued that the addition of fluoride to a supply otherwise pure and wholesome is really treating it for a medicinal effect. In view of the above evidence I cannot treat any statement of Counsel as an admission that the supply here in question before the addition of the fluoride was pure and wholesome. However, even assuming that this supply when treated with chlorine would be pure and wholesome, the only other evidence in the record bearing upon the point is the affidavit of Dr. Andrew L. Chute, Pediatrician-in-Chief of the Hospital for Sick Children, Toronto, and Professor of Pediatrics at the University of Toronto. Paragraphs 3, 4, 5 and 6 of his affidavit read:—

"3. Tooth decay, by affecting the majority of people in a community, has come to be recognized by the Medical and Dental Professions as one of the major health problems of our time.

"4. I have been associated with others in the consideration of the effect of fluoridation of public or communal water supplies.

"5. Studies covering a period of over thirty years under a wide variety of controlled conditions have established the effects of the consumption by human beings of fluoridated water.

"6. I am convinced from a thorough perusal of these studies that the addition of fluoride in the proportion of one part per million to a public water supply which is deficient in that constituent is a safe measure and is free from any systemic ill-effects. Such treatment renders the water more wholesome as it is effective in reducing tooth decay to the extent of approximately 60 per cent where consumption of such water begins at an early age and continues during childhood and adolescence. The benefits extend into adult life."

These paragraphs indicate that certainly water is rendered more wholesome through the addition of fluoride in the proportion named and, always presuming that the Council acts in good faith, I cannot read s. 41 of the Act in such a way

as to declare that in enacting By-law No. 278 the Council of the appellant exceeded its authority. The good faith of the appellant's Council was not impugned. I have not overlooked that Dr. Chute states in para. 7 of his affidavit:—

> "7. In my opinion fluoridation is a most valuable measure in preserving the teeth and as a result a valuable measure in maintaining health."

This does not alter my opinion that in proceeding as it did the Council of the appellant was not invading the realm of public health and, therefore, it is unnecessary to consider the provisions of The Municipal Act, The Public Health Act, or of any other statute referred to. A decision in the contrary sense would raise the question as to the powers so to do of other municipalities under the relevant statutes who have added fluoride to their water supplies, but I refrain from discussing their position and restrict myself to a consideration of the power of the appellant's Council under the provisions of s. 41 of the Act.

The appeal should be allowed, the Order of the Court of Appeal set aside and the judgment of the judge of first instance restored, with costs throughout.

MR. JUSTICE LOCKE:

The appellant is a body corporate constituted by c. 73 of the Statutes of Ontario 1953. The expression "Metropolitan Corporation" is defined by the Act to mean the municipality of Metropolitan Toronto and, by s. 3, it is provided that the powers of the corporation shall be exercised by its council and, except where otherwise provided, its jurisdiction confined to the metropolitan area. The area so defined includes the municipality of the Village of Forest Hill, which is one of the area municipalities referred to throughout the Act.

Of the various powers and duties vested in and imposed upon the appellant, this matter concerns only those dealt with in Part III of the statute under the subheading "Metropolitan Waterworks System."

Section 36 declares that, for the purpose of supplying to the area municipalities water for their use, the Metropolitan Corporation shall have all the powers conferred by any general Act upon a municipal corporation and by any special Act upon an area municipality or local board thereof respecting, *inter alia,* the establishment, maintenance and operation of a waterworks system.

Section 37 (1) reads:—

> The Metropolitan Council shall before the 1st day of December, 1953, pass by-laws which shall be effective on the 1st day of January, 1954, assuming as part of the metropolitan waterworks system all works for the production, treatment and storage of water vested in each area municipality or any local board thereof and all trunk distribution mains connected therewith, and on the day any such by-law becomes effective the works and mains designated therein shall vest in the Metropolitan Corporation.

By s. 39 it is declared that where all works of an area municipality for the production, treatment and storage of water are assumed by the Metropolitan Corporation, the municipality shall not thereafter establish or operate any such works.

Section 41, so far as it is relevant to the present matter, reads:—

> The Metropolitan Council may pass by-laws for regulating the time, manner, extent and nature of the supply of water from its waterworks system, and every other matter or thing related to or connected therewith which it may be necessary and proper to regulate in order to secure to the inhabitants of the Metropolitan Area a continued and abundant supply of pure and wholesome water.

By a written report dated May 2, 1955, the Works Committee of the appellant municipality, after an investigation, details of which were disclosed in it, recommended to the council that the Commissioner of Works be authorized to take the necessary steps to undertake the

fluoridation of the metropolitan water supply. By a by-law enacted on July 14, 1955, the municipality directed the Commissioner of Works to take the necessary steps forthwith:—

> to undertake the treatment of the metropolitan water supply by fluoridation and to obtain all approvals required by statute for the installation of the equipment necessary for such treatment.

Section 101 of the *Public Health Act* (c. 306, R. S. O. 1950) requires the council of any municipality contemplating, *inter alia,* any change in an existing waterworks system to submit the plans, specifications and an engineer's report of the water supply and the works to be undertaken, together with such other information as may be deemed necessary by the Department of Health to that department, and declares that no such works shall be proceeded with until the source of supply and the proposed works have been approved by the department.

The Commissioner of Works applied under the provisions of this section for approval of a change in the existing waterworks system of the Metropolitan Corporation to provide for the addition of one part per million of fluoride to the water supply. By a certificate dated July 11, 1955, signed by the Minister of Health, the Provincial Sanitary Engineer and the Deputy Minister of Health it was certified that "the installation of equipment for fluoridation of the water supply" at the waterworks plants of the appellant and the source of water supply and the proposed works had been approved by the department as required.

The respondent, by notice of motion given as permitted by s. 293 of the *Municipal Act* (c. 243, R. S. O. 1950), applied for an order to quash for illegality the by-law referred to "on the grounds, *inter alia,* that such by-law is *ultra vires* and beyond the competence of the said Council." While other grounds of attack were suggested, the only one argued has been that in passing the by-law the council exceeded its powers.

The application was dismissed by Mr. Justice F. G. MacKay. That learned judge was of the opinion that is was for the council acting in good faith to determine what treatment, if any, should be given to the water to most effectively carry out its statutory obligation. He was of the opinion that the arguments advanced as to the advisability of adding fluoride were irrelevant and should not be considered, except for the purpose of determining whether it had been shown that the council was not so acting. In his opinion, the evidence supported his view that good faith had been shown.

The unanimous judgement of the Court of Appeal, delivered by the Chief Justice of Ontario, reversed this order and directed that the by-law be quashed. In the reasons it is stated that it had been admitted in the Court of Appeal that the water, without the addition of fluoride, was pure and wholesome. Accepting the admission as establishing that fact, it was said that nothing in the *Metropolitan Toronto Act,* the *Public Health Act,* the *Public Utilities Act* or the *Municipal Act* conferred upon any of the area municipalities power to add some chemical to a pure and wholesome water supply and that the question to be decided was as to whether the respondent had power to do so "for a medicinal purpose." With great respect, I disagree and think the judgment appealed from is based upon a false premise.

In deciding the question as to whether the by-law was *intra vires* the council, it was, of course, necessary to determine the exact nature of the action which the by-law assumed to authorize. The uncontradicted evidence is that "a physically or chemically pure water does not occur in nature and has defied all efforts to obtain it." This is the opinion of Joslyn Rogers, a chemical engineer of long experience whose affidavit was filed on the application. Mr. Rogers further said that it cannot be produced artificially, except in small quantities and with considerable difficulty. The admission that the water

was pure—if intended as an admission of fact—was, therefore, inaccurate. If intended as meaning that it was "pure" within the meaning of the appellant's Act of incorporation, that was a question of law for the decision of the court and not to be decided upon the admission of counsel. It should be said that no such admission was made in this Court.

In the extracts from the work of E. V. Suckling, M.B., to whose opinions in this respect Joslyn Rogers subscribes, it is said that wholesomeness is purely a medical question while purity must be physical and chemical. Apart from such evidence, the accuracy of the statement seems obvious. In view of the evidence to the contrary, I would decline in a matter of such moment to act on an admission of counsel in the Court of Appeal that the water supply was, without any addition, either pure or wholesome. That question, which, in my view, is only relevant to the issue as to whether the members of the council have acted in good faith in the exercise of their statutory duties, is to be decided on the evidence adduced upon the application.

The only evidence on the question is that of Dr. A. L. Chute, the pediatrician-in-chief of the Hospital for Sick Children in Toronto and a professor of pediatrics at the University of Toronto. His affidavit states that tooth decay, by affecting the majority of people in a community, has come to be recognized by the medical and dental professions as one of the major health problems of our time. After saying that studies covering a period of over thirty years under a wide variety of controlled conditions had established the effects of the consumption by human beings of fluoridated water, the affidavit reads:—

> I am convinced from a thorough perusal of these studies that the addition of fluoride in the proportion of one part per million to a public water supply which is deficent in that constituent is a safe measure and is free from any systemic ill-effects. Such treatment renders the water more wholesome as it is effective in reducing tooth decay to the extent of approximately 60 per cent where consumption of such water begins at an early age and continues during childhood and adolescence. The benefits extend into adult life.
>
> In my opinion fluoridation is a most valuable measure in preserving the teeth and as a result a valuable measure in maintaining health.

As an exhibit to this affidavit, there is a list of some 65 municipalities in Ontario where natural fluorides are contained in the water supply in concentrations varying from .01 to 2.5 parts per million.

The requirement that the water supply shall be "pure and wholesome" would appear to have originated in the early English statutes. Thus, by s.35 of the *Waterworks Clauses Act* (c.17, 10 Vict.) the undertakers operating waterworks are required to provide "a supply of pure and wholesome water sufficient for the domestic use of all the inhabitants of the town or district within the limits of the special Act." Apparently in recognition of the fact that, as stated in the evidence in this matter, chemically pure water does not occur in nature and cannot be produced artificially except in small quantities and with difficulty, the *Public Health Act* (c.49, 26 Geo. V and 1 Edw. VIII), by s.111, imposes on the local authority the duty to provide "a sufficient supply of wholesome water for domestic purposes."

The word "wholesome" is used in more than one sense. One of the definitions in the Oxford Dictionary reads:

> Promoting or conducive to health; favourable to or good for health; health-preserving.

The definitions in Webster's New International Dictionary include the following:

> Promoting physical well-being; beneficial to the health or the preservation of health; healthful.

The material does not assume to say what are the causes of tooth decay. The evidence, however, shows that the use of fluoridated water does materially reduce tooth decay where consumption begins at an early age, that these benefits extend into adult life and that it is a valuable measure for maintaining health. As the

article from Suckling's work shows, water is treated with chlorine, lime and other chemicals or substances for the purpose of rendering it sterile and I would draw the inference from the statements made that doing so renders it less likely to cause typhoid fever or other water borne diseases.

With respect for differing opinions, I consider that the appellant in discharging its duty to supply water that is wholesome may treat the water with chlorine, lime or other substances to render it sterile and less likely to cause typhoid, or with fluoride to render it less likely to be injurious to the health by contributing to tooth decay.

It is, in my opinion, a necessary inference from the evidence that the water supply in the Metropolitan District of Toronto whatever it may be, is in its natural state lacking in the element fluoride and thus less wholesome than it would be if that were added, to the extent mentioned. If the supply in its natural state contained fluoride to the extent of 2.5 parts to a million, as does the water obtained from the Boone River by the Municipality of Essex, and if, in the opinion of the council acting in good faith, it was considered advisable to reduce the fluoride content to one part in a million, I think it would be within the power of the municipality to do so. Indeed, I find it hard to understand why it can be fairly contended that this would be beyond the municipal powers any more than to add chlorine to render the water more wholesome by rendering sterile and harmless some existing constituent in it. If the argument which succeeded in the Court of Appeal is carried to its logical conclusion, it would be *ultra vires* the appellant to use water of the character used by the Municipality of Essex or the 64 other municipalities referred to by Dr. Chute since such waters, in their natural state, contain fluoride in varying proportions.

In my opinion, nothing more is required to sustain the present by-law than the clear provisions of s.41 of the appellant's Act of incorporation. It is, of course, not suggested that the council has not acted in good faith in attempting to discharge the duties imposed upon it by that section and it is not disputed that the introduction of fluoride, to the extent proposed, will render the water supply more wholesome, assigning to that word the responsibility of determining what steps should be taken to obtain a pure and wholesome water supply to the Metropolitan Council and not to the courts.

I would allow this appeal with costs and restore the order of Mr. Justice MacKay.

MR. JUSTICE RAND:

(Mr. Justice Taschereau and Mr. Justice Fauteax concur)

The question in issue is whether the Municipality of Metropolitan Toronto, under its power, given by s. 41 of its charter to pass by-laws

> . . . for regulating the time, manner, extent and nature of the supply of water from its waterworks system, and every other matter or thing related to or connected therewith which it may be necessary and proper to regulate in order to secure to the inhabitants of the Metropolitan Area a continued and abundant supply of pure and wholesome water, and to prevent the practising of frauds on the Metropolitan Corporation with regard to the water so supplied

can bring about what is called the "fluoridation" of its metropolitan water supply. The process, so-called, is simply the introduction into the water of a minute portion of fluorine, say, one part in one million, for the purpose of promoting the health of the teeth and in particular the elimination of caries, by building up in the bone substance a greater resistance to the inroads of decay by foreign mat-

ter within the mouth. In the water the fluorine effects no chemical change but becomes merely diffused in solution.

Mr. Manning's contention is short and precise: the duty and the authority of the Municipality is to furnish "pure and wholesome water"; admittedly the addition of fluorine does not affect its quality, otherwise wholesome; by its authority to regulate the "nature" of the supply it may introduce into the particular supply such substances as are generally found in water and in its judgement are beneficial to the health of the users; and that in regarding such an object we must distinguish between ends and means, that is, the end being wholesome water, the means, an agency of promoting health, rather than the end being to serve a health purpose superimposed on a functional or water means.

Notwithstanding the attractiveness of this argument, I am unable to agree with it. The word "nature" can be satisfied by other and more accustomed meanings than that of a medicinal addition for another than a water purpose. The nature of the supply is too well known for the question: It may be taken from a lake, a river, a stream, accumulated in a reservoir, obtained from artesian wells or collected directly from rainfall. Although the exact role of water in the physiological economy was not gone into, the matter of furnishing that indispensable aliment to life has too long been the subject of discussion to leave much doubt of what it means to furnish it in a wholesome quality. That a municipality may purify it, that is, reduce objectionable foreign matter in it by means harmless to its consumers, is universally understood. In the settled understanding, also, a "water supply" comes from natural sources which show differences in their degree of purity. "Purity" itself is well understood although partaking of the impreciseness of any general term. Solutions of different substances are invariably present, but the human body has evolved in an adaptation to them in their normal or subnormal quantities.

Does it lie, in such terms of authority, with a local government to furnish a supply of synthetic water by approximating the ordinary or normal components? If its object was to obtain the ordinary or natural composition of substances in solution so as to furnish what the body has become adapted to receive as water there would be grounds for justifying such a measure; and if it were a matter of choice between a natural supply containing normal quantities of fluorine and one lacking that element, I have no doubt the choice could not be challenged. These involve the matter of furnishing water for its accepted purposes only.

But it is not to promote the ordinary use of water as a physical requisite for the body that fluoridation is proposed. That process has a distinct and different purpose; it is not a means to an end of wholesome water for water's function but to an end of a special health purpose for which a water supply is made use of as a means.

The method proposed does not appear to be the only feasible mode of making available to the public what is considered by the Municipality to be desired health mistration. Fluoridation apparently can be provided otherwise than by making it general in the water supply. If that is so, there is here neither that accepted desirability for its use nor an unobjectionable manner of supplying it which in other situations might be influential considerations in the determination of the question raised.

I would, therefore, dismiss the appeal with costs.

MR. JUSTICE CARTWRIGHT:

I am in general agreement with the reasons of my brother Rand and those of the learned Chief Justice of Ontario, and will add only a few words.

The question is as to the power of the Council to enact the impugned by-law, and the answer depends upon the nature of the subject-matter to which it relates. If, on the evidence in the record, it could properly be regarded as action by the Council to provide a supply of pure and wholesome water or to render more pure and wholesome a supply of water already possessing those characteristics I would hold it to be valid. But, in my opinion, it cannot be so regarded. Its purpose and effect are to cause the inhabitants of the Metropolitan area, whether or not they wish to do so, to ingest daily small quantities of fluoride, in the expectation which appears to be supported by the evidence that this will render great numbers of them less susceptible to tooth decay. The water supply is made use of as a convenient means of effecting this purpose. In pith and substance the by-law relates not to the provision of a water supply but to the compulsory preventive medication of the inhabitants of the area. In my opinion the words of the statutory provisions on which the appellant relies do not confer upon the Council the power to make bylaws in relation to matters of this sort.

In view of the difference of opinion in the courts below and in this Court, it is fortunate that this is a case in which if we have failed to discern the true intention of the Legislature the matter can be dealt with by an amendment of the statute.

I would dismiss the appeal with costs.

MR. JUSTICE ABBOTT:

For the reasons given by my brothers Rand and Cartwright, with which I am in agreement, the appeal should be dismissed with costs.

In a profession there is no shortcut to effective human relations. The highway to effective human relations is paved with ethics in this basic sense, and the foundation for this pavement is an ethical concept of the nature of the profession itself. The professional man must base all his human relations on respect for human beings. He must earn the respect of society by accepting his professional responsibilities. He will honestly and gladly accept the responsibility of deciding what is best for each patient and will try to persuade him to take that course of treatment. He will make his particular decisions for some other reason than the difference on the margin of profit, and he will always remember that every man, however poor, however repulsive even, merits his finest efforts. He will have fine human relations, not as a means of manipulating his patients, not as a means of controlling them, but as a means of being of service to them.

The good professional is an amateur. An amateur is a man who does something for the love of doing it, and the best professional man in your profession today is a man who is doing what he loves to do because human beings need what he has to give.

E. B. Colwell, Ethics and Human Relations,
Journal American College of Dentists, Dec. 1956

A Year in Retrospect*

K. M. JOHNSON, D.D.S., F.I.C.D., Winnipeg, Manitoba

The President's Address

I would thank you, the members of the Canadian Dental Association for the honour you have conferred on me when you elected me President. I have enjoyed serving you these many years on the Board of Governors and now as President. If at times I found it a little strenuous, may I say there were also compensations and rewards. The privilege of going across our country from sea to sea and meeting so many fine dentists in their own provinces and in their own homes is something not given to everyone, but it is something not to be forgotten.

Collectively, we are members of a fine profession. Individually, I have found our members just as fine. I have been very much impressed with the high standard of the dentists in their own communities. This I have been able to observe as I have gone about and may it ever continue to be so.

As I see our profession, it is assuming that position which was visualized for it by the Presidents of the past. Their work has not been in vain.

As the late Dr. Wallace said, "No conscious effort toward betterment is ever lost. It is held in the lap of time."

Not all of you were able to attend the meeting of the Board of Governors. Their actions will of course, be published in toto in the Transactions.

During the past few year several points have seemed to be outstanding.

First, the position of Dentistry as a health service has been enhanced by the success of fluoridation of communal water supplies. May I sound a word of warning. As the old saying goes, "Eternal vigilance is the price of safety". The so-called "antis" are at work trying to undermine this great effort.

Second, The National Hospital Service has definitely reached a point of no return. Intense study and effort on our part will be required if we are to avoid the pitfalls of this great movement of change in the health service of Canada.

Third, the problem of personnel is even greater. I urge each and every one of you to try to bring into the profession young men and women of the finest quality to serve this great nation of ours. Also this is related directly to:

Fourth, the increase in teaching facilities. Dalhousie University will soon open its new school. The University of Toronto is increasing its capacity. The University of Manitoba is starting a new school and in British Columbia we have hopes of early development, but with all this, our rate of increase does not equal the rate of increase of the nation's population.

Fifth, much has appeared in the daily press and magazines regarding radioactivity and its effects on human genetics. Your Executive has been alert to this problem and believe that if proper care is used in installation and operation of the dental X-ray, it is not a source of danger. We shall, however, continue to study the problem and observe the investigations of others, that you may be properly informed.

Sixth, Canada is not the only country which realizes the importance of Dentistry. In the United States a Commission

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* Delivered at the Annual Meeting of the C.D.A. June 24th, 1957. Winnipeg, Manitoba.

has been set up to make an extensive survey of Dentistry. This survey will cover four phases: dental education, dental research, dental practice and dental health. The Commission is composed of groups representing education, management, labour, medicine and dentistry. Its findings should be of great benefit to our nation as well as their's, and to the dentists of Canada as well as of the United States. You will be pleased to learn that our own Dr. Don Gullett has been appointed to this important Commission.

Two other subjects are receiving serious consideration by the Association. First, the relationship and proper functioning of auxiliary personnel and, secondly, the economics of dental practice. Both these matters are of great importance, particularly in the light of current developments in health services.

A demand from the public exists for the institution of plans whereby dental care can be rendered on other than the individual basis. Great care must be exercised in initiating such plans. Over a number of years considerable study has been given to this matter with the result that the Board of Governors has made definite recommendation at the meeting just concluded.

The Association during recent years has by persistent effort been able to secure several actions of material benefit to Canadian Dentistry. Tariffs have been adjusted favourably, convention expenses made deductible, and pension payments made allowable deductions for taxation purposes. These benefits mean much to the profession.

In Canada we have five great schools of dentistry. Soon we shall have six. We have a Council on Dental Education, whose standing is recognized the world over, and which is constantly studying the latest and best methods of teaching those who will engage in the practice of Dentistry but, somehow I do not worry about techniques, impressions, fine castings or clever surgery . . . I feel that if the grounding of character is present these will be added. I have practised long enough to know that this is so.

I would close with a quotation from one of the fine editorials of that Master of Dentistry, the late C. N. Johnson. I make no apology for having used it before in almost every province in Canada. It states so well what I wish to say:

"The greatest need of the hour in Dentistry is not so much the consummation of a better technique, better fillings, inlays, crowns, bridges or dentures. The fundamental need is to save the soul of dentistry, to preserve the ideals and ethics of our profession, to stand four square to the world in the establishment of those principles that gave us professional status at the beginning, to prove the faith that is in us for the maintenance of a high ethical concept that shall create a sharp distinction between our policies as a profession and the practices of the market place.

"The worship of mammon has no part in the scheme of real professional life.

"The exaltation of an ethical faith, the consecration of our energies to the service of the poor and rich alike, the sacrifice of our comfort for the welfare of others—these things are the need of the hour in our profession. All else will be added unto us if we but stand fast and proclaim our conviction before the world."

Support the United Appeal in Your Area when Your Canvasser Calls

Installation of President

A. Gerald Racey

Dean Emeritus Arthur L. Walsh, of the Faculty of Dentistry, McGill University acted as Installing Officer and the Installation ceremony was conducted with the following words:

I deem it a signal honour and a rare privilege to be entrusted with this very pleasant duty. More than that, it is a matter of deep personal pleasure and satisfaction. Our new President, Dr. A. G. Racey, is not only a former student of mine, but also a valued personal friend.

Now, for a brief outline of his career, which I think you would like to have.

Dr. Racey was born in the Province of Quebec. He took his pre-dental training in Queen's University, Kingston, Ontario, where he met the present Mrs. Racey.

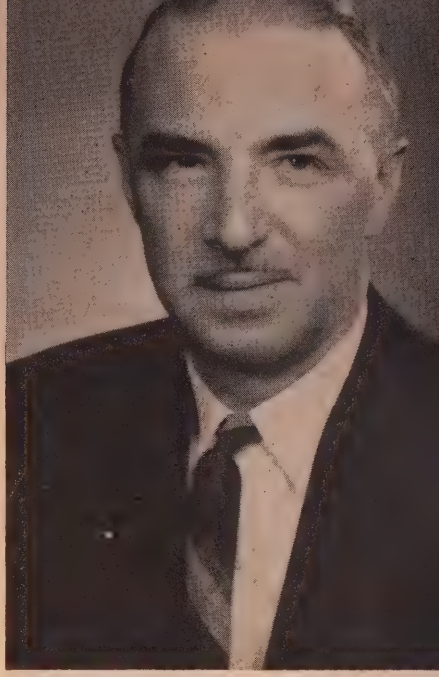
Dr. Racey graduated from McGill University with high honours. He proceeded to Harvard University and took one academic year of post-graduate work under Dr. Tolman.

Soon after his return he was given a professorship in the Université de Montreal in Oral Pathology, and in McGill University of which dental school he is a very important member of the Faculty.

He is a Fellow of the American College of Dentists and the International College of Dentists; an executive member of the National Dental Examining Board; an Executive Member of the National Research Council (the Dental Section), and for the past seven years he has been a member of the Board of Governors of the Canadian Dental Association.

Don't you think the unseen hand of fate has carefully prepared Dr. Racey for his new office as President?

I need not remind my hearers that it is a high honour to belong to our profession, devoted and dedicated as it is to the advancement alike of public health and preventive medicine, as well as the individual health and personal well-being of the patient.



Portrait by Nakash

DR. A. GERALD RACEY, President The Canadian Dental Association.

How much greater an honour it is to be singled out from nearly six thousand practitioners for the coveted presidency. Your colleagues, Dr. Racey, have indeed honoured themselves in bestowing upon you this highest honour in their keeping. For you this must truly be a proud and moving moment in your career and the very climax of your most cherished ambitions. You are following a fine man, Dr. Kenneth Johnson, and a noble succession of good men—with one exception. "Others have laboured: ye have entered into their labours."

A. G. Racey — as I look upon your two initials and your surname, I find if I lop off the first letter and the last letter, what I have left is very interesting and significant — it spells "GRACE". Knowing you I find that a very happy omen.

You will, I am sure, discharge your duties with utmost grace, for you are by nature gracious.

I confidentally bespeak for you, Dr. Racey, the loyal and devoted support of all of your colleagues. That is why I now say to them and to you, "Coats off to the Future".

Dr. A. Gerald Racey, I take great pride in installing you as President for the coming year of the Canadian Dental Association.

Dr. Racey replied as follows:

I wish first to thank Dr. Walsh for being here today to present me for this unique office which brings such high honour to my province as well as to myself.

Dr. Walsh launched me on my career in Dentistry some twenty-five years ago, when I entered McGill under his Deanship.

If you had not been here today, Sir, this moment would certainly not have been complete. So it is most fitting and I am deeply grateful.

It is with sincere appreciation that I accept the office of President of the Canadian Dental Association and I would like to say this is shared by my wife, whom you have already met.

I am sure I feel at this moment as most of my predecessors have felt – greatly honoured, but with admitted trepidation as I am fully aware of the very deep responsibilities that are involved.

These fears, however, are considerably lightened when I know that I shall have a group of men in the Executive which I consider are unparalleled. I shall have a Board of Governors and the Chairmen of Committees which I think are the most splendid group that I have worked with for a long time.

I will have the guidance and sympathy of a man such as President Ken Johnson, who has accomplished so much during his term of office, and apart from these I shall have the most competent of Secretaries in the person of Don Gullett to instruct me.

So, Ladies and Gentlemen, I hope to survive.

When we next meet I shall be waiting to welcome you all in my Province in 1958. Arrangements are well advanced to receive you in our new hotel in Montreal –the Queen Elizabeth. This will be in the early part of October–one of the loveliest months in that part of the country.

In closing I would like to say thank you again for my Province and myself, and I shall try very hard to render a good account of myself.

The specialty of oral surgery is that part of dental practice which deals with the diagnosis, the surgical and adjunctive treatment of the diseases, injuries and defects of the human jaws and associated structures.

The scope of the specialty of oral surgery shall include the diagnosis, the surgical and adjunctive treatment of the diseases, injuries and defects of the human jaws and associated structures within the limits of the professional qualifications and training of the individual practitioner and within the limits of agreements made at the local level by the health team concerned with the total health care of the patient.

William F. Harrigan, D.D.S., M.D.
Journal of Oral Surgery, July 1957

Dr. W. L. Hutton and Dr. Howard J. Merkeley Awarded Honorary Memberships

President Johnson, at the Annual Meeting of the Canadian Dental Association presented honorary memberships to two recipients, Dr. W. L. Hutton, M.O.H. of Brantford, Ontario and Dr. Howard J. Merkeley of Winnipeg, a past-president of the Canadian Dental Association.

Dr. Hutton, through illness, was unable to be present, but was represented by Dr. H. K. Brown, Dental Consultant to the Department of National Health and Welfare, with whom Dr. Hutton worked so closely on the Brantford-Sarnia-Stratford Fluoridation Study.

The president made presentation to Dr. Hutton as follows:

We come to a point unique in the history of the Canadian Dental Association. We are about to award an Honorary Life Membership to a man who is not a member of our profession. This hasn't been done before, but your Board of Governors has agreed with the Executive that it is richly merited in this case.

The recipient is Dr. W. L. Hutton, Medical Health Officer of Brantford, whose vision and desire for public welfare has enabled our profession to carry to success the greatest experiment on fluoridation of communal water supplies ever attempted. We can now say that fluoridation is the greatest public health measure that Dentistry has known. Dr. Hutton has earned the title of "Father of Fluoridation" in Canada. You will be further interested to learn that Dr. Hutton was born in Winnipeg – a true son of the West.

It is a matter of great regret that owing to ill health, Dr. Hutton cannot be with us in person, but we do have Dr. H. K. Brown of the Federal Department of Health, who was associated with Dr. Hutton as representative of the Dental Profession throughout the ten year experiment.

Dr. Brown, I ask you to accept this award on behalf of Dr. Hutton, and to convey our good wishes and thanks to him along with this certificate.

Dr. Brown replied as follows:

I regret that my friend and colleague, Dr. W. L. Hutton, is unable to be present here, personally, today, to receive this certificate of Honorary Life Membership in the Canadian Dental Association.

Dr. Hutton has recently suffered a severe and acute illness.

It has been my honour and pleasure to be associated with Dr. W. L. Hutton during the past ten years. The Canadian Dental Association, in conferring this Honorary Life Membership here today is honouring the first health authority in the world to take action to fluoridate the water supply over which he exercised responsibility, and further for which he accepted full responsibility.

There were others who suggested that the water supplies might properly be fluoridated. Dr. W. L. Hutton came forward and took the responsibility to fluoridate the water supply of Brantford.

I am proud, Mr. President, to accept this Certificate of Honorary Life Membership on his behalf, and I shall deliver it to him personally, along with an account of the ceremonies related to the presentation.

The president then made presentation to Dr. Merkeley:

It is not only a privilege but a delight,

to present to Dr. Howard James Merkeley a Certificate of Honorary Life Membership in the Canadian Dental Association.

We have been personal friends for over forty years. As in the case of Dr. Hutton, when I wished for specific information, I turned to "Who's Who in Canada."

Howard was born in Chesterville, Ontario. His parents were United Empire Loyalists. He received his early education at the Morrisburg Collegiate Institute. He graduated from the Royal College of Dental Surgeons with honours in 1911 and was awarded his Master's degree by the same institution in 1916.

Howard has made a great and continuing contribution to our profession, having held many offices in Dental Associations. He is a Past President of the Canadian Dental Association. He served as first President of the National Dental Examining Board. He is a Fellow of the American College of Dentists, and with all this he has found time to write many articles, to give clinics in the larger centres of Canada and the United States, to lecture to medical students and to engage in research.

As a citizen he has acted as Chairman of the Manitoba Game Commission since its formation in 1920. His work in the establishment of the muskrat industry in Manitoba has been most helpful. Also he has devoted much time to political affairs.

Howard has four children. One daughter holds her Registered Nurse's Certificate, one son, Garth, is a respected member of our profession, and two sons practise Medicine.

Howard and his wife, Eileen, whom you all know and who has helped so much with the Ladies' Section at this Convention, live at Hampton House, here in Winnipeg.

Therefore, Howard, it gives me much pleasure to present to you the highest award in the gift of the Canadian Dental Association—Honorary Life Membership.

Dr. Merkeley replied as follows:

There are times when words are quite inadequate. This is such a time. Dr. Johnson has conferred upon me the highest honour that he, as President of the Canadian Dental Association can bestow. I accept this great honour with deep humility and sincere appreciation.

The Motto of the University of Toronto is "As a twig is bent the tree is inclined". As a twig of the R.C.D.S. it was my great good fortune to be bent by the master hands of the Wilmotts, Seccombe, Cummer, Thornton, the Stewarts, Coram, Fife, Bothwell, and many others.

Then in 1911, when I arrived in Winnipeg, I was privileged to become associated with that princely gentleman, Harry Garvin. Later on, Ken Johnson and Fred Warriner joined us and also came under his spell.

Our dental schools have great traditions of service in the field of national welfare in both peace and war. They have fitted many excellent men for unselfish service, until today Dentistry is recognized for its contribution as a health service.

We can well be proud of Bagnall, McLean, Walsh, Mowry, McCutcheon, Charron, Mason, Ellis, Hamilton and the many men who are, and who have been associated with them.

It has made me extremely proud of my profession to know men from coast to coast who have contributed time and effort in furthering the objectives of Dentistry.

Another great source of satisfaction has been to note the high calibre of the young men we now are enlisting for a dental career. As we meet and get to know them we can be well satisfied that the future of Dentistry is in safe hands and that they can be trusted to meet and to solve the problems that will face our profession.

This certificate will serve as a visual reminder of many happy occasions and pleasant associations with the grandest bunch of fellows I know.

Again I most sincerely thank you.

EDITORIAL

The Board of Governors' Meeting—1957

At the recently concluded meeting of the Board of Governors of the Association some twenty-five reports were presented. These presentations were subsequently studied in great detail in reference committees and later read to and discussed by the entire Board.

It is always interesting to view the reaction of one experiencing his first Board meeting because the observations are invariably the same. One is greatly impressed with the thoroughness and the seriousness of purpose with which the members approach their responsibilities. It is a source of regret that greater numbers of the profession do not avail themselves of the opportunity which membership in the Canadian Dental Association provides in attending and participating in the annual meeting of the Board of Governors.

The matters discussed are of vital concern to all members of the Canadian dental profession and one cannot stress too much that it would be in the enlightened self-interest of all members to participate in these deliberations.

The transactions of the association will make all reports and the actions taken on them available to the membership in due course. Even a casual perusal of the contents of the Transactions will provide ample evidence to the fact that the functions of this organization are increasing with dramatic rapidity. The dental profession, not, perhaps, in numbers, is developing with our country herself. The interest of government in the healing arts has necessitated a broad area of activity by the profession. That coupled with the profession's own natural development has necessitated an almost unprecedented programme by the Association.

Although all areas of discussion were important perhaps the two most significant developments related to Auxiliary Services and Health Insurance.

The Board was most anxious that the Association effect a study of auxiliary services from three standpoints – types, training, and relationship to the dental profession. Because the vocation of the dental technician was initiated by the dental profession and the product of the dental technician is complementary to the dental profession and because the public is served through mutual understanding and co-operation between dental technicians and dentists, the Association effected a policy in respect to dental technicians. The Canadian Dental Association supports efforts by or on behalf of dental technicians which have as their goal an improved ethical relationship between dentists and dental technicians. The Association would also lend support to legislative efforts by dental technicians when such efforts are directed toward ethical and legitimate objectives and would vigorously oppose all legislative

efforts designed to permit the actual practice of prosthetic dentistry by other than fully trained and qualified personnel. The Association also would support measures designed to give stability to the vocation of dental technician and officially recognizes the valued contribution of dental technicians toward the betterment of dental health through their services to the dentist, for the Canadian public.

Concern was expressed that, although health services were constitutionally administered at a provincial level, dental service boards did not exist in the provinces to administer any acceptable plan that may be developed. An action was taken which gave approval to a statement on Group Dental Health Services Plans. This statement set out the need for such plans with observations in respect to cost and administration. This statement will be published in a subsequent issue of the Journal. This is a consideration to which all corporate members should give serious attention. If plans are to be developed the profession should be concerned with their administration.

It is quite impossible to enunciate all actions taken in the limited space at our disposal. The reports themselves contained an abundance of information and may be perused when the Transactions appear. The action of the Board in respect to each report will be documented immediately following the report itself.

A partial list of the actions of the Board, however, follows:

– the Association is to continue to utilize all available means at its disposal to further the securing of an expansion to teaching facilities.

– agreed to organize a dental health day or week.

– expressed utmost confidence in the C.D.A. Pension-Assurance Plan as the Association had been strongly advised to adopt a policy of guaranteed rates and definite returns for its Plan. The Executive was given authority to deal with any problems or modifications which may arise because of the new governmental regulations on the deductibility of pension payments from personal income tax.

– approved a budget for $125,645.00.

– learned that all monies promised by the corporate members for the purchase of the headquarters property had been paid.

– Encouraged the development of further Workshop Conferences on the basis of the pattern developed at the Conference in Toronto.

– encouraged corporate members to develop better channels of communication with their local dental societies.

– officially recognized two specialities, orthodontics and oral surgery and directed that study and consideration be given to the whole question of specialization.

– gave official approval to the Saskatchewan Dental Services Plan.

– enunciated the importance of public health personnel and stated that they should enjoy proper professional status within departments of health and receive salaries comparable to other public health personnel having equivalent professional training.

– requested the Health Insurance Studies Committee to investigate ways and means whereby a study of the Economics of Dental Practice in Canada may be undertaken.

– stated that a dental service in a hospital should be an autonomous service with the exception of oral surgery performed on in-patients, in which case it becomes the joint responsibility of the Dental Surgeon-in-Chief and the Surgeon-in-Chief of the hospital.

– directed the editor to restrict publication of interneship vacancies to those hospitals approved by the C.D.A. or the A.D.A.

– adopted a statement on the Basic standards of Hospital Dental Services.

– adopted a statement on the employment of the X-ray in dentistry.

– learned of the appointment of the Dean for the School of Dentistry in the University of Manitoba–Dr. J. Neilson.

This school expects to open in the fall of 1958.

– urged the government of British Columbia to take immediate action for the establishment of a school of dentistry in the University of British Columbia.

– reiterated its view that the dental profession should be represented on the staff of the Federal Administrator of Civil Defence.

– stated that a need existed for clarification of the academic requirements for the admission of prospective students to schools of dentistry. The following statement was suggested:

> "All students admitted to an approved dental school shall have possessed certification, previous to admission of having successfully completed at least two academic years of Arts and Science in a recognized university. The subjects of English or French, Mathematics, Chemistry, Physics, and Biology shall have been included for at least one year."

– asked that the terms of references of the Committee on Legislation be reviewed in order to permit the committee to give greater guidance in this important field.

– urged the Council on Dental Education to stimulate the schools of dentistry to produce, as a part of their undergraduate activities, undergraduate journals, and conveyed congratulations to McGill University on the excellence of the McGill Dental Review.

– urged that the subjects of preventive dentistry and dentistry for children be included in the annual convention programmes of the Association.

The next meeting of the Board of Governors will be held in Montreal immediately prior to the Annual Convention. In making plans to attend the convention in the new Queen Elizabeth Hotel from October 5th to 8th, 1958, be sure to allow sufficient time to participate in the Board meeting from October 1st to 4th. The insight you will receive in respect to the activities of your Association will serve as an enrichment to your professional life.

BOOK REVIEW

Full Dentures. Prepared by: George Alexander Lammie, Ph.D., B.Sc., H.D.D. Obtainable through: The Ryerson Press, Toronto. Pages: 212. Price: $8.50.

Since this text is written by the Senior Lecturer in Dental Prosthetics at the University of Liverpool, one might assume that it represents present day thinking in Britain.

The author explains that he has written primarily for the dental student but "most of the points will find general application in practice."

While it is evident that full denture techniques in Britain vary rather widely from our own conceptions, the text on the whole is interesting.

Half the book is devoted to mouth examination and various impression techniques which appear to make it top heavy and unbalanced. Chapter 10 is well done. It is a resumé of "Patient's Complaints" under three headings—

1. Complaints immediately after insertion.
2. Complaints arising spontaneously during a period of comfortable wear.
3. Complaints arising after several years of comfortable wear.

On page 180, he recommends mouth grinding for full upper and lower dentures "developing an even occlusion in centric—balancing contacts are then obtained during protrusive and lateral articulation." Canadian and American teachers believe that this is done better on an adjustable articulator.

It was rather disappointing to find something less than 2 pages devoted to the subject of Esthetics. The author recommends that, when checking esthetics, one should examine only the upper denture since "only in a few cases does the lower denture contribute to the appearance of the individual." At a time when esthetics has become so popular a subject in America, this is a rather startling statement.

On the whole, this text is attractive and competent.

Wilfrid D. Clark.

THE ASSOCIATION

New Appointments to the Board

Dr. J. M. Darcy has been appointed to represent the Newfoundland Dental Society. He succeeds Dr. F. A. Janes.

Dr. W. G. McIntosh of Toronto is appointed to succeed Dr. P. G. Anderson as of July 1st. Dr. McIntosh's appointment was announced following the May meeting of the Board of the Royal College of Dental Surgeons of Ontario.

Change of Address—C.D.A. Pension-Assurance Plan

The administration office of the C.D.A. Pension-Assurance Plan has now been moved from Brockville to Toronto. All communications respecting the plan should be addressed in future to:

C.D.A. Pension-Assurance Plan
2249 Yonge St., Toronto 7, Ontario.

Appreciation from Canadian Red Cross Society

The Central Council of the Canadian Red Cross Society at its recent annual meeting unanimously approved the following resolution:

> "The Central Council of the Canadian Red Cross Society expresses appreciation to the doctors, nurses, dentists, teachers and other professional instructors for the time and effort which they have expended in the various phases of Red Cross activities."

Past-President McIntyre Honoured

Honorary Life Membership was conferred upon Dr. R. R. McIntyre, Immediate Past President of the Canadian Dental Association, by the Calgary & District Dental Society on May 1st last. The presentation was made by Dr. John Clay, a former C.D.A. President.

Sale of Alcoholic Beverages

The Dominion Bureau of Statistics reports sales by liquor authorities totalled $723,577,000 in the fiscal year 1955-56, and total government revenue from control and taxation of alcoholic beverages reached $363,834,000.

Fluoridation in the United States

The May 1957 issue of U.S. Public Health Reports gives detailed information respecting fluoridation in the United States tabulated to the end of the year 1956.

The years 1945 to 1956 inclusive are reported.

The following facts are selected from the article.

To the end of the year 1956:

Number of municipalities with fluoridation	1,487
Total population of these municipalities	31,416,112
Number of municipalities fluoridation discontinued	80
Population of municipalities fluoridation discontinued	1,902,199
Number of municipalities reinstated after discontinuance	10
Population of municipalities reinstated after discontinuance	222,741

Of 18 cities in the United States with over 500,000 population, 10 are fluoridating and it is anticipated that others will follow. In nearly 85% of the communities the governing body alone constituted the authority for the fluoridation action. In 5% the authority was by referendum and in 4% the utilities commission made the decision. It is noted that the smaller municipalities resorted to referendum more frequently.

15th Australian Dental Congress

Members of the Canadian Dental Association are most cordially invited to attend the 15th Australian Dental Congress to be held in Adelaide, South Australia, from 23rd to 27th February, 1959.

Fourth National Dental Congress—Mexico City

The Mexican Dental Association invites the members of the Canadian Dental Association to participate in its Fourth National Dental Congress, which will be held in Mexico City from the 10th to 14th of November 1957.

Canadian Sickness Survey

Bulletin 10 on the Canadian Sickness Survey has now been issued. Some question exists respecting the value of the statistics on dental diseases presented in this bulletin. On request, Dr. R. M. Grainger, Division of Medical Statistics, Ontario Department of Health, makes the following comments:

"The latest bulletin of the Canadian Sickness Survey prepared jointly by the Dominion Bureau of Statistics and the Department of National Health and Welfare provides National Estimates of illness. Frequency by Diagnostic Classification according to the International Statistical Classification of Diseases, Injuries and Causes of Death of the World Health Organization.

"Two points must be kept in mind in reviewing the tabulated data. The first is the definition of illness set forth on page 5 of Bulletin No. 5 and again on page 6 of the presently released Bulletin No. 10. Illness reported in this survey was defined as any disability for which service was sought plus any disruption of normal activity sufficiently pronounced to be recognized as a variation from the individual's concept of 'normal good health.' Thus one sees that the basis of recording is very subjective because an experienced dentist would recognize that a patient has only a vague idea of whether his oral health is good or poor. For example, few patients could tell if the looseness of their teeth was normal or an advanced state of periodontal disease, and acute aches can result from a bit of food under a contact point and need not indicate serious defects are present.

"The second point worthy of attention is the dental section of the International Statistical Classification which is in need of revision by a group of dental experts. The last revision of the section took place in 1948 before a dental consultant to the World Health Organization had been appointed. The next revision is to be in 1963 and should be an opportunity for correcting the limitations of the present official classification of dental disease.

"Lastly, the Dominion Bureau of Statistics has combined the International Classifications in order to increase the frequency of the items so that the percentage would be more reliable. This has been done blindly and has resulted in obscuring the information that was available in terms of the International Classification. To illustrate this point classification 530 which is 'dental caries' has been combined wth 534 which is 'toothache from unspecified cause'. Either alone might have been of some interest but combined there is no meaning left since toothache especially in adult life can arise frequently from periodontal disease.

"Summing up then, the usefulness of dental recordings in Bulletin Number 10 is very slight and if their limitations are not recognized by the authorities to whom the Sickness Survey is of interest, they may be very misleading. The least that can be said is that it is time that agencies undertaking survey work in the dental field recognized the need to consult the dental profession at all stages of the work."

THE LIBRARY

Additions

ADAMS, W. C.: History of Dentistry in Oregon. 1956. 343 p. illus.

BACON, E. S.: Your child's teeth; a guide for parents. 1957. 124 p.

FRYKHOLM, K. O.: On mercury from dental amalgam; its toxic and allergic effects and some comments on occupational hygiene. 1957. 108 p. illus. (Fr. Acta Odontologica Scandinavica Vol. 15, Suppl. 22).

GEOFFRION, P.: La methode de J. E. Johnson; twin wire arch. 1956. 1741 illus.

GUSTAFSON, G.: The histopathology of caries of human dental enamel. 1957. 55 p. illus. (Fr. Acta Odontologica Scandinavica Vol. 15, No. 1, 1957).

GUSTAFSON, A.-G.: The similarity between contralateral pairs of teeth. (Fr. Odontologisk Tidskrift, Vol. 63, No. 3, 1955).

SOLLMAN, T.: A manual of pharmacology and its applications to therapeutics and toxicology. 8th ed. 1957. 1535 p.

STERN, L.: Pathology of the mouth and jaws. (Fr. Ciba Clinical Symposia, Vol. 5, No. 3, 1953).

WEBSTER, W. W.: Fracture of the facial bones. 1957. 145 p. illus.

ECONOMIC SECURITY

The Reality of Inflation

E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R. Econ.S., Consulting Economist

In the previous article we found the formula to express the balance in any economy between money and goods, where M = the amount of currency in the hands of the public (including bank deposits and credit); V = the velocity with which the money supply is circulated; P = the general price level; and T = the total physical volume of goods:

$$MV = PT$$

If the amount of money or the rapidity with which it circulates increases without a proportionate increase in the volume of goods, prices must go up – money has less value, or purchasing power – that is inflation.

If the physical volume of goods increases without a proportionate increase in the volume or circulation of money, prices must go down–money has more value, or purchasing power–that is deflation.

Turning now from the theory to the statistical record of what has taken place in Canada over the past year, what do we find? (All data are from the "Statistical Summary" of the Bank of Canada, and the "Canadian Statistical Review" of the Dominion Bureau of Statistics).

Money Supply:

From about mid-1955 to the end of 1956, the total of currency, bank deposits, general bank loans (non-government), and consumer credit rose from $16.9 billion to $18.0 billion, an increase of 6.4 per cent.

Velocity of Money Circulation:

In the same period, the average monthly cheque clearances through Canadian clearing houses rose from $13.4 billion to $17.2 billion, an increase of 17 per cent.

Total Physical Volume of Goods:

The total volume of production increased on the D.B.S. Production Index from 254.6 to 289.8 for a gain of 7 per cent.

Prices:

Consumer Price Index rose from 116.0 to 120.3, most of the 4 per cent being experienced in the last seven months of the period. The more significant Wholesale Price Index, however, showed an advance from 217.8 to 229.4.

Applying the practical data to the formula, it is apparent that the price rises experienced in Canada are fully accounted for in the increase in money supply and the velocity of spending; indeed that the price rise has not yet fully accounted for the increase in the other factors and that further price rises may be expected, even if money supply and velocity now be held in check. There can be no doubt of a definite inflationary movement in Canada, and of the continuance of the movement for at least some time.

In seeking the source of increased money and activity, the first noteworthy matter is a net capital movement of more than $2,090 millions into Canada, principally from America, over the years 1955 and 1956. The inflationary character of capital investment in a period of full employment is well established: It puts purchasing power in the hands of those engaged upon the various projects, without at least immediately creating consumer goods. The pressure of demand upon existing stocks is thereby increased and prices rise.

The second matter for attention is the Canadian labour force (all persons gainfully engaged) and their income. Over the period being examined, the numbers in the labour force have increased by 5.4%. As we have seen, physical volume of production has increased by 7.0%. But salaries and wage payments have increased by 21.3%. This is clear evidence that remuneration is getting substantially ahead of productivity. Whether this arises from competition for labour in a period of full employment, or from the exercise of organized labour's ability to enforce its demands, is immaterial: Labour costs increasing more rapidly than productivity increase the cost of production without increasing either quantity or quality and are, therefore, inflationary.

The injection of so much new capital into a fully employed economy (unemployment about 2%, and probably fully accounted for by persons changing jobs; therefore, no genuine long-term unemployment) combined with wage rates rising more rapidly than productivity provides a most inflationary climate for the Canadian economy.

The next article will continue the discussion of the inflation problem which is of the greatest significance for every man, woman and child in Canada.

GENERAL NEWS

C.D.A. Secretary Appointed to Commission On the Survey of Dentistry

The American Council on Education recently announced the complete membership of a Commission on the Survey of Dentistry in the United States which will hold its first meeting in Washington, D.C., on August 7.

President Arthur S. Flemming, of Ohio Wesleyan University, Delaware, Ohio, former director of the Office of Defence Mobilization, is chairman.

Raymond F. Howes, the Council's acting chief executive, said the Council has named the Commission and will conduct the independent survey at the request of the American Dental Association. The task will require two years and cost $400,000.

The Commission, holding final authority for administration of the survey, was selected, Howes said, as representative not only of the broad interests of the dental profession but of the public.

The members are: Chairman Flemming; Dr. Otto W. Brandhorst, secretary, American College of Dentists, St. Louis; George Bugbee, president, National Health Foundation, New York City; W. Howard Chase, president, Communications Counselors, Inc., New York City; Anna Fillmore, general director, National League for Nursing, Inc., New York City; Dr. Willard C. Fleming, dean, School of Dentistry, University of California, San Francisco; Dr. Don W. Gullett, secretary, Canadian Dental Association, Toronto, and Dr. Herman E. Hilleboe, commissioner of health of the State of New York, Albany.

Others are Chancellor Lawrence A. Kimpton of the University of Chicago; Charles P. McCormick, chairman of the board, McCormick and Company, Baltimore; Lee W. Minton, international president, Glass Bottle Blowers Association of the U.S. and Canada, Philadelphia; Chancellor Franklin D. Murphy of the University of Kansas, Lawrence; Dr. Percy T. Phillips, trustee of the American Dental Association, New York City; Philip N. Powers, president, Internuclear Company, Clayton, Mo., and Henning W. Prentis, Jr., chairman of the board, Armstrong Cork Company, Lancaster, Penn.

The survey will include an impartial and critical study of four areas — dental education, dental research, dental practice, and dental health, Howes said. The objective is "to assess the achievements, resources and potentialities of dentistry in the United States, to determine desirable areas of future development, and to recommend methods for the better provision of an essential service to the American people."

The $400,000 cost will be financed by grants as follows: the Kellogg Foundation, $250,000; American Dental Association, $120,000; Rockefeller Brothers Fund, $25,000; and the Louis W. and Maud Hill Fa-

mily Foundation, $5,000.

Howes said the commission will select a director of the survey. His staff, with headquarters in Chicago, will include an assistant director, five or six technical and editorial staff associates, and a secretarial and clerical staff of six to eight persons.

The Commission and its director will be assisted in the four specific areas of work by corresponding committees, the membership of each of which will be made up of individuals having special competence and judgment in that particular area.

Dr. Arthur S. Adams, president of the American Council on Education, has said of the project: "This survey can and should be as important to dentistry in all of its aspects as the Flexner Study of 1908 was to medicine. I also see the Survey of Dentistry in the same context as the Survey of Pharmacy, which was conducted by the American Council on Education in 1949 under the brilliant directorship of Dr. Edward C. Elliott. A growing vital profession deserves the thoughtful examination which this survey can provide."

THE CORPS

Lt.-Col. T. L. Marsh represented the Director General Dental Services at the several R.C.D.C. Militia summer camps, which commenced in late June and continued through most of July. There were four of these combined training exercises this year. One was held at Camp Niagara for the three Ontario units and a second, at Valcartier Camp, included the units from Quebec and the Maritime Provinces. The third location was unique for the R.C.D.C., being in H.M.C.S. "Naden" at Esquimalt, B.C. This camp was conducted for two consecutive weeks and consisted of a week each for two groupings of units from the three Prairie Provinces and British Columbia. The attendance and interest surpassed that of previous years and altogether, the programme was very stimulating and worthwhile.

Brigadier E. M. Wansbrough did not inspect the Camp Niagara concentration because it coincided with the C.D.A. meeting in Winnipeg but he was able to make an official visit to the Valcartier exercises.

Colonel G. B. Shillington, who has been the Command Dental Officer, Western Command, during the last three years, has been appointed to the staff of the Dental Directorate at Army Headquarters. Colonel Shillington has had a diversified experience in the Corps both during World War II and the intervening years. He is a graduate of the University of Toronto and has served continuously since November 1939.

Lieutenant Colonel I. A. L. Millar, who was until quite recently, the Commandant of the R.C.D.C. School, has assumed the duties of Command Dental Officer, Western Command and Commanding Officer No. 11 Dental Co. with Headquarters in Edmonton. He graduated from Dalhousie University and was appointed to the C.D.C. in 1939. Lieutenant Colonel Millar has held various senior appointments in the Corps both in Canada and Europe.

The promotion of Lieutenant J. F. Mullins to the rank of Captain was recently announced by Army Headquarters. Capt. Mullins enlisted in the Corps in December, 1939, at Halifax, N.S., where he was born and received his education. He served in Europe for five years during World War II. He was commissioned as a quartermaster-adjutant in 1952 and served subsequently in that capacity with No. 35 Field Dental Unit with No. 1 Air Division RCAF, in France. Captain Mullins is now employed in the Dental Directorate at Army Headquarters.

Major P. S. Sills, who is the senior dental adviser to the Commander, UNEF, Egypt, continues to report many interesting facts on the dental problems being met by our R.C.D.C. section, there. The services of our Canadian dental officers are in constant demand by other nationals of the UNEF, particularly those of Finland, India and Indonesia. He reports that the Bedouins are constantly on the alert at the new UNEF Maintenance Area at Rafah. These wandering Arabs, he states, will steal anything and everything in sight and a twenty-four hour guard has to be maintained as a consequence.

Dr. D. R. Girard of Granby, Que., has been accepted for an appointment in the R.C.D.C. He will be employed in Quebec Command.

Three more officers have been retired from the R.C.D.C. These include Major R. A. Gray who has served since his graduation from the University of Alberta in 1950. Captains W. S. McIntyre and D. A. Stewart have also ceased their service after completing three years with the Corps.

THE PROVINCES

British Columbia

Vancouver and District Dental Society

Dr. Wm. Miller, who is retiring as President of the Council of the College, was presented with a silver rose bowl at the final meeting in May. The Society President, Dr. Wes Munsie, spoke eulogistically of his fine services to dentistry and Dr. Miller made a poetic response:

"I am a part of all that I have met;
Yet all experience is an arch wherenthro'
Gleams that untravell'd world, whose margin fades
For ever and for ever when I move."

Twelve annual reports of committees were given in review of the year's activities.

Directing affairs next season will be these officers:

President—Dr. J. G. Ryan.
President-elect—Dr. Max Nacht.
Secretary-Treasurer—Dr. C. W. Gardner.
Directors—Drs. O. F. Wright, J. C. Lewis, W. R. Scott and W. E. Shaw.

A cocktail party preceded the meeting and after dinner, as is customary, a non-technical subject was enjoyed. Mr. Herb Capozzi, General Manager of the B.C. Lions' Football Club, divulged facts and secrets about a sport which is becoming increasingly popular. Dr. J. L. Hornibrook, Chairman of the Visual Education Committee, showed an interesting film about the Dade County Dental Research Clinic in Florida.

Golf Tournament

The annual spring golf tournament of the Vancouver and District Dental Society was held at the Vancouver Golf Club on May 9. It never rains on Thursday, so 80 aspirants teed off to try to capture the spoils.

The winners were: Leach Trophy (low gross) Dr. M. J. Waterman, 79; B.C. Dental Supply Cup (2nd low gross) Dr. M. Krasnoff, 80; Ash Temple Cup & Replica (low net) Dr. R. J. Warshawski, 68.

The long drive was won by Dr. R. A. Mitchell. His belt went some 275 yards off the 17th tee. Closest to the pin on No. 3 was Dr. J. L. Moreside, about four feet from the cup. Visitors' prizes were won by Gerry Splatt of the B.C. Dental Supply Company and Ed Albert of the B.C. Laboratory Association. Other prize winners were Drs. J. Naimark, J. H. Pentland, H. V. Tungate, A. D. MacPherson, A. K. Buckwold, T. G. Booth and L. B. Alexander.

The golf committee was composed of Drs. Dick Butler, A. L. Campbell and F. W. Banford.

D. H. M.

Victoria and District Dental Society

Dr. T. W. James was elected president of Victoria and District Dental Society at a recent meeting.

President-elect is Dr. R. A. Johnson; secretary, Dr. E. N. Screech; treasurer, Dr. B. E. Metcalfe, and directors, Dr. W. W. McLuhan, Dr. R. L. Horne and Dr. D. T. Dowman.

B.C. Dental Association

Dr. L. W. Beamish of New Westminster took office as president of the B.C. Dental Association at the recent annual meeting of the College of Dental Surgeons of B.C. The meeting was held during the B.C.D.A. convention.

Others elected to office were Dr. I. U. MacIntosh of New Westminster, secretary; Dr. Wesley C. Munsie of Vancouver, president-elect, and Dr. Max Nacht of Vancouver, treasurer for the second term.

The new president of the B.C. Dental Assistants' Association, which held a joint convention, is Marilyn Mark, also of New Westminster. Donna Butcher was chosen president-elect; Lorraine Code, vice-president; Evelyne McCartie, secretary, and Joy Juleff, treasurer.

New Brunswick

Maritime Dental Association

The 1957 Maritime Dental Convention was held on June 10, 11 and 12, at the Brunswick Hotel in Moncton. Moncton being the "Hub" of the Maritimes, it is very accessible to all three provinces. There were a hundred dentists registered and many brought their wives. A very attractive programme was enjoyed with something to do every minute to hold one's interest. Able clinicians were at hand and socially, as well, it was a very great success. As with many successful conventions the weather adds so

much and in this case it was practically perfect. The president of the N.B. Dental Society, Dr. D. A. Somerville of Bristol, was the keen and genial official host. However, everyone would admit the Moncton dentists under the able convention manager, Dr. Donald Steeves, kept the convention going on an even keel with seemingly very smooth sailing.

On the opening day there were table clinics which held everyone's interest. Those participating were W. Q. Mulligan, Saint John; Donald Eaton, Halfax; Dean Rice, Peticodiac; Capt. W. K. Dickie, R.C.D.C.; J. E. Merritt, Halifax, and Daniel Britt, Saint John. In addition, on the opening morning a very interesting coloured film and slides were shown on Fixed Bridges, by Dr. William D. Cavanagh. These pictures were shown for the first time in Banff a year ago at the C.D.A. meeting by Dr. Frank Martin of the University of Toronto staff. Regrettably, Dr. Martin was unable to attend but he was represented most ably by another member of the Toronto Faculty, Dr. William Cavanagh. Other clinicians at the Convention were Dr. Robert E. Doerr of Ann Arbor, Michigan, on "Advantages and Disadvantages of High Speed Rotary Instruments for Cavity Preparation", Dr. H. Bruce Squires of Ottawa, on "Periodontics for the General Practitioner", Dr. John J. McCarthy, of Montreal, on "Oral Surgery for the General Practitioner", and Mr. Walter W. B. Dick on "Hospital Accounting and Statistics".

At luncheon Dr. H. K. Brown, the dental consultant of the Department of National Health and Welfare, spoke on the progress with fluoridation and the gradual decrease in opposition. Also, Dr. J. D. MacLean, Dean of the Dental Faculty of Dalhousie University, spoke on Dental progress.

In addition to this very interesting and educational academic programme there were many enjoyable social affairs. Receptions, luncheons and dinners were given with true eastern hospitality and were exceptionally well organized. The highlight of the social programme was the dinner and dance on Tuesday evening. Dr. D. Somerville presided at the dinner and the guest speaker was Dr. W. T. R. Flemington, President of Mount Allison University. The dance was cabaret style with "free" refreshments. The wives were certainly not neglected and their programme was exceptionally well organized and carried out. For the ladies, a large bag of trade gifts and souvenirs was given on registration. The favours for the ladies at luncheons and dinners were most attractive and gratefully appreciated. Mrs. Lea Allanach and her committee deserved great credit for the smooth and efficient way the ladies' entertainment was carried out.

During the Convention the N.B. Dental Council had a meeting and the Nova Scotia Dental Society held its annual business meeting. All told, the Maritime Dental Convention under the auspices of the New Brunswick Dental Society was a great success. Again the N.B. executive and the convention committee of Moncton dentists are to be congratulated for a very memorable meeting.

J. F. E.

Nova Scotia

Halifax Dental Association

The following were recently elected as officers of the Halifax County Dental Society:

President — Dr. Carl Dexter.

Vice-president — Dr. D. E. MacLachlan.

Secretary — Dr. Earl Dexter.

Treasurer — Dr. G. H. Faulkner.

Auditors — Dr. H. J. MacConnachie and Dr. G. K. Macintosh.

Historian — Dr. Alex Frank.

Education Conference

Through the cooperation of the Council on Dental Education of the Canadian Dental Association, and by means of a grant for the purpose from the W. K. Kellogg Foundation, a two day conference has been conducted for the teaching members of the Faculty of Dentistry of Dalhousie University on May 27th and 28th.

The programme was arranged and conducted by Professor A. S. Mowat of the Department of Education, Dalhousie University. Others participating in the programme, in addition to members of the Faculty, were Dr. A. C. Lewis, Dean of the Ontario College of Education, Toronto, Professor H. M. Fowler, also from the Ontario College of Education, Professor Donald Campbell of St. Francis Xavier University, Professor M. V. Marshall of Acadia University, Professor C. F. Moir of Dalhousie University, and Mr. Murray Rankin and Dr. Maurice Keating, Assistant Superintendents of the Halifax Schools.

Nova Scotia Dental Association

At the recent meeting of the Maritime Dental Association in Moncton, N.B., the Nova Scotia Dental Association held a concurrent meeting and elected the following officers:

President — Dr. Moses Claener, Sydney, N.S.

1st Vice-president — Dr. Arthur Ervin, Dartmouth, N.S.

2nd Vice-president — Dr. W. H. Macneil, Halifax, N.S.

Secretary — Dr. A. B. Haverstock, Halifax, N.S.

Executive Member — Dr. Thomas Rodgers, Yarmouth, N.S.

C.D.A. Representative—Dr. George Dewis, Halifax.

C.D.A. Alternate — Dr. D. C. Eaton, Halifax.

DR. MOSES CLAENER, President
Nova Scotia Dental Association

Ontario

The Canadian Society of Dentistry For Children

On Saturday, May 11, 1957 the eighth Annual Convention of the Canadian Society of Dentistry for Children was held in the Roof Garden of the Royal York Hotel in Toronto.

The excellent programme, as would be expected, was concerned largely with preventive dentistry and early treatment. Dr. Gordon Nikiforuk, Programme Chairman, and Dr. Peter Currie in charge of table clinics, are to be commended on their choice of both subject matter and speakers.

Ten table clinics were presented, beginning at 9 a.m. until 10.30 a.m. These were well attended and certainly those present benefitted considerably. Dr. M. A. Noonan of Birmingham, Michigan, had as his subject "Fractured Anteriors". Dr. Blake McAdam of Toronto presented "Amalgam Technique". Dr. Robert Rapp of Ann Arbor, Michigan, showed a clinic on "Pulpotomy Evaluation". Dr. Joseph Lamping of Pembroke had as his subject "Splinting Anterior Teeth", while Dr. Malcolm Johnston of Toronto showed interesting cases of "Orthodontics for the Cleft Palate Patient". The London Orthodontic Study Club, a group of general practitioners from London, Ontario, presented five very interesting table clinics on "Interceptive Orthodontics". The tables were presented in sequence. Dr. Bruce Taylor's subject was "Differential Diagnosis", Dr. James Guest, "Habits", Dr. James Millar, "Space Problems", Dr. John Reid, "Crossbites and Versions", and Dr. Robert Wainwright, "Techniques".

The Table Clinic programme was of the usual high calibre presented at former meetings.

The morning essayist was Dr. James H. Shaw, a Canadian of whom we are justifiably proud and who is Associate Professor with the Harvard School of Dental Medicine, Boston, Mass. Dr. Shaw dealt with the subject of nutrition and oral health. Reference was made to the important finding that there are post-eruptive benefits to teeth from ingestion of fluoridated water. The selectivity of the enamel for fluorides was noted. Dr. Shaw reported on the production of periodontal disease in experimental animals. This is a very fine and informative essay by a clinician who demonstrated himself to be a speaker well grounded in his subject matter.

After a short business meeting the members and guests adjourned to Luncheon in the Concert Hall. There were short addresses by the retiring President, Dr. W. H. Feasby of Hamilton and the President-Elect, Dr. Gordon Nikiforuk. In his talk Dr. Feasby mentioned the pride of the Canadian Society of Dentistry for Children in having become a Section of the Canadian Dental Association. He also expressed the desirability of the Section becoming a more National body and mentioned the steps already taken towards approaching other

groups across Canada in an effort to bring this about.

Dr. Nikiforuk expressed the thanks of the membership to Dr. Feasby for his untiring efforts both before and during his term of office as President.

Dr. C. R. Castaldi of the Department of Paedodontics, Faculty of Dentistry, University of Alberta, was the afternoon essayist. Dr. Castaldi's subject was "Restorative Procedures for the Child Patient". A film was shown in which Dr. Castaldi demonstrated excellent restorative techniques. He showed quadrant dentistry for children with the use of the rubber dam.

The Cleft Palate Treatment and Research Centre of the Hospital for Sick Children in Toronto presented a Symposium on Cleft Palate Habilitation. Dr. M. A. Cox, paediatrician, introduced the symposium and acted as moderator. Dr. Wm. K. Lindsay, plastic surgeon, showed slides and described the original deformitiés, surgical techniques and fine results attained for the child born with a cleft lip and/or cleft palate. Dr. J. B. Whaley, Chief of the Ear, Nose and Throat Department, spoke on the hearing losses that many times accompany the defect. Mrs. Elizabeth Curtis, working in the Human Genetics Department under Dr. Norma Ford Walker, read a paper showing the influence of genetic background on the incidence and distribution of the defect as shown in the research by this group and compared it with other studies. Miss Ruth Lewis and Miss Margaret Hamlen, Speech Therapists, presented a paper and demonstrated by tape recordings the fine accomplishments made under their direction in correction of the speech defects so often present in these children. Dr. Wm. J. Spence, orthodontist, showed slides and described the particular techniques used by the dentist in accomplishing functional occlusion and acceptable dental aesthetics for the child born with a cleft palate. The symposium emphasized the cooperation necessary when the team approach to habilitation of the child with a cleft lip and/or palate is used. Considerable research and clinical work is being undertaken at the Hospital for Sick Children by the members of this panel.

This report only serves to show the fine balance between academic and clinical subjects achieved by the Executive of the Canadian Society of Dentistry for Children in arranging their annual convention programme for 1957.

The Executive of the Canadian Society of Dentistry for Children for 1957-58 are as follows:

Honorary President . Dr. W. H. Feasby
President ..... Dr. G. Nikiforuk
President Elect .. Dr. D. G. Johnstone
Vice President .... Dr. D. R. Anderson
Secretary-Treasurer .. Dr. W. J. Spence
Historian ..... Dr. D. L. Rife

Councillors

Dr. W. A. Burgman ... Dr. C. D. Beierl
Dr. F. E. Dawe ..... Dr. E. A. White
Dr. N. A. Mancini . Dr. M. J. Crockford
Dr. E. P. Currie ..... Dr. M. G. Boyes
Dr. C. L. Strachan . Dr. D. J. E. Mitchell
Dr. L. E. Hastings Dr. J. R. Callingham

W. J. S.

Essex County Dental Association

A general meeting of the Essex County Dental Association was held on May 29th, 1957 and a new executive was elected and installed.

The following are the elected members: President, Dr. R. M. Sanderson; Vice-president, Dr. D. C. Wickens; Treasurer, Dr. W. J. Pritchard; Secretary, Dr. J. W. Wilson.

Quebec

Dental Association of Quebec Convention

Dr. Gabriel Lord, president of the Dental Health League of the Province of Quebec, spoke at an opening luncheon meeting of the Dental Association of Quebec convention held recently.

Dr. Lord said: "An individual in perfect health must have a clean mouth, but too few people who follow a clean life think about dental care until it is too late. This applies equally to adults and children."

The speaker stressed that "latent infections in the mouth constitute a grave problem among the Canadian people. And it is for this reason that the League seeks to further its educational program on dental health.

"The Dental Health League serves not only dentists of the province, but also the whole population. It has always been our aim to teach, through any educational medium available to us, the principles of sound dental health so that the public will be aware of the magnitude of the problem and the ways in which it can be solved."

Tracing the history of the Dental Health League, Dr. Lord noted that it was first conceived in 1939 by Dr. Jean Brault of St. Lambert, who published several writings on the subject. It was in 1940 that Dr. Brault was named a member of the Dental

Health Commission of the College of Dental Surgeons and promoted his ideas.

"In 1945," Dr. Lord said, "the Commission was made into an independent body under the name it now holds — The Dental Health League of the Province of Quebec, Incorporated." Its work has increased in scope and importance ever since, he concluded.

Seated at the head table were: Dr. Vincent Tremblay, president of the Dental Society of Montreal, chairman of the meeting; Dr. A. McCabe, Dr. A. Hebert, Dr. G. Rochon, Dr. A. Surprenant, Dr. E. Vinet, Dr. G. Boisclair, Dr. J. Lafleur, all executives of the League.

Quebec Association of Dentists

The Lieutenant-Governor of the Province of Quebec, Hon. Gaspard Fauteux, was the guest of honor at the closing banquet of the annual convention of the Quebec Association of Dentists which was held at the Hotel Sherbrooke.

The first and second general conferences of the convention took place on the second day, after a luncheon during which Dr. Vincent Tremblay, President of the Dental Society of Montreal, was chief speaker.

At the first, Dr. Roger Batalle, of the Paris Dental School, France, spoke on diseases of the mouth. Dr. Paul MacMahon, of Sherbrooke, spoke at the second general session on general anaesthesia, and the organization of dental services at Sherbrooke's Hotel Dieu hospital.

At the opening banquet the guests of honor were His Worship, Mayor Armand Nadeau, Msgr. Georges Cabana, Archbishop of Sherbrooke, Hon. J. S. Bourque, Provincial Minister of Lands and Forests, and of Hydraulic Resources, and Maurice Gingues, Liberal candidate for Sherbrooke County.

Dr. Bataille presided at the third and fourth general conferences of the convention. At the luncheon meeting the guest speaker was Dr. Andre Charest, President, Mouth-Disease Society of Quebec. An honorary professorship at the Paris Dental School was conferred on Dr. Paul Geoffrion, vice-dean of the Dental Faculty of the University of Montreal.

Some 200 dentists from various parts of the province attended the convention which was under the chairmanship of Dr. Julien Giroux of Sherbrooke, and embraced the Dental Society of Montreal, the Mouth-Disease Society of Quebec, the Dental Society of Three Rivers, and the Eastern Township's Dental Society.

Saskatchewan

The North-Eastern Saskatchewan Dental Society

The North-Eastern Saskatchewan Dental Society held two meetings at the Balmoral Hotel recently. Dr. W. R. Watchler was elected president; Dr. H. Large, secretary; and Dr. A. Melville, first vice-president.

At both meetings filmstrips were shown with sound projection. They clearly demonstrated the actual techniques and operations of current advances in dentistry. Lecturers and clinicians consisted of faculty members of universities from the United States representing dental colleges from coast to coast. These were sponsored by the University of Illinois College of Dentistry and the effort is part of the Telephone Extension programme in dentistry.

IN MEMORIAM

Edmund Joseph Courville — Dr. Edmund Joseph Courville of Cornwall, Ontario, died in June, 1957.

Dr. Courville was born on September 28, 1900 at Maxville, Ontario, and received his early education at Alexandria, Ontario. He graduated from the Royal College of Dental Surgeons of Ontario in 1924 and practised from May, 1924 to September, 1924 in Windsor. He then moved to Cornwall where he remained to his death.

Dr. Courville was vice-president of Lions Club and the O.A.L.A. In 1945 he was Alderman on Cornwall's first city council and was High School Trustee.

Edward M. Ely — Dr. Edward M. Ely of Ottawa, died on June 18, 1957 after a long illness.

He was born at Cataraqui, Ontario in December, 1874 and received his early education in Toronto. He graduated from the Royal College of Dental Surgeons of Ontario in 1900 and from 1902 to 1906 practised in North Dakota, U.S.A. From 1906 to 1952 he practised in Ottawa, after which he retired because of poor health. In 1950 he became an Honorary Member of the Royal College of Dental Surgeons.

Dr. Ely was a member of the Masonic Lodge and the United Church of Canada.

Surviving is his wife, the former Gertrude Mills.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	October 5th-8th
1959	Halifax, Nova Scotia	June 21st-24th
1960	Ottawa, Ontario	September
1961	Saskatoon, Saskatchewan	June 25th-28th
1967	Toronto, Ontario *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Sept. 22-24	Eastern Ontario Dental Assoc.	Chateau Laurier Hotel	Dr. A. Slone, Secretary	101 Rideau St., Ottawa, Ont.
Oct. 13-17, 1957	American Institute of Dental Medicine Annual Meeting	The Oasis Hotel, Palm Springs, California	Miss M. G. Lewis, Exec. Secretary	2240 Channing Way, Berkeley 4, Calif.
Oct. 21, 1957	Toronto Academy of Dentistry Annual Dinner	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow Secretary	2298 Yonge St., Toronto, Ont.
Oct. 23-25, 1957	Thirty-third Annual Fall Clinic	Montreal, P.Q.	Dr. D. B. Ward, Chairman	Fall Clinic, 1414 Drummond St., Suite 390, Montreal, Que.
Oct. 31-Nov. 2nd, 1957	American Academy of Periodontology Annual Meeting	Hotel Di Lido, Miami Beach, Florida	Dr. H. A. Hartman	Chairman Pub. Comm., 4187 Pearl Road, Cleveland 9, Ohio
Nov. 1-2, 1957	American Academy Gold Foil Operators	Miami, Florida	Capt. R. B. Wolcott	Navy Dent. Tech. School, Naval Training Center, San Diego, Calif.
Nov. 28, 1957	Toronto Academy of Dentistry Winter Clinic	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow	2298 Yonge Street, Toronto, Ont.
Dec. 9-13, 1957	Greater New York Dental Meeting	Hotel Statler, New York	Dr. C. A. Laborne, Sec.-Treas.	Hotel Statler, Room 106A
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.

SHORT GRADUATE COURSES

TUFTS UNIVERSITY—Course in Periodontology, October 7-October 11, 1957; Periodontics, February 26-28, 1958

Refresher Courses:

1. Crown and Bridge Prosthesis
   6 Mondays—Oct. 21, 28, Nov. 4, 18, 25, Dec. 2, 1957
2. Clinical Endodontics
   6 Fridays—Nov. 8, 15, 22, Dec. 6, 13, 20, 1957
3. Crown and Bridge Prosthesis
   Feb. 28, Mar. 1, 7, 8, 14, 15, 22, 29, 1958

Apply: Director of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Mass.

TEMPLE UNIVERSITY—School of Dentistry
—Clinical Endodontics, October 14-19, 1957

For further information and application: Louis Herman, D.D.S., Postgraduate Division, Temple University School of Dentistry, 3223 North Broad St., Philadelphia 40, Pa.

POSTGRADUATE COURSES

New York University College of Dentistry announces a forty-hour postgraduate course –Principles and Practice of Endodontics—beginning Wednesday, October 23, 1957.

Wednesdays and Fridays, 9.00 a.m. to 1.00 p.m. for five weeks

Tuition: $200.00 Instruments: $65.00 (approx.)

Apply: Director, Postgraduate Division, New York University College of Dentistry, 209 East 23rd Street, New York 10 N.Y.

Volume 23
Numéro 8
Août 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Les stomatites vésiculeuses*

par ROGER BATAILLE, stomatologiste, Paris, France

Les stomatites vésiculeuses sont nombreuses et je limiterai cet exposé à une étude de l'herpès et de l'aphte; c'est dire que je n'étudierai pas le zona, ni l'impétigo, ni l'extodermose pluriorificielle dont les lésions de début sont pourtant vésiculeuses. Je n'en parlerai que pour établir un diagnostic différentiel. J'éliminerai également les stomatites bulleuses qui sortent entièrement du cadre de ce travail.

Pourquoi ai-je choisi l'herpès et l'aphte?

C'est parce que ces stomatites prennent des aspects divers, que certains de ces aspects sont mal connus et conduisent souvent à des erreurs de diagnostic.

C'est aussi parce que les stomatites vésiculeuses sont de plus en plus fréquentes et qu'elles prennent, de temps en temps, des formes graves. C'est encore parce que ces affections, en tous cas l'herpès, sont dues à des virus et qu'on a fait ces dernières années de grands progrès en virologie.

C'est enfin, parce que ces progrès tiennent à la mise au point de techniques de laboratoire nouvelles dont je dirai un mot. Je pense au microscope électronique, aux cultures de tissus et aux cultures de virus sur la membrane chorio-allantoïdienne de l'embryon de poulet.

Un autre problème peut encore être discuté. Les stomatites virales sont-elles plus nombreuses parce que nous les connaissons mieux? Ou peut-on voir dans ce fait une conséquence de la modification de la pathologie humaine sous l'influence des antibiotiques?

Avant toutes choses, je vais définir le terme "vésicule". On appelle vésicule, en dermatologie, une petite poche, un petit sac épidermique contenant un liquide clair. Différents caractères importants différencient une vésicule d'une bulle. D'abord la taille et le nombre. Une vésicule a la taille d'une grosse tête d'épingle,

* Conférence prononcée au Congrès de l'Association dentaire de la province de Québec, à Sherbrooke, le 27 mai 1957.

d'un grain de mil; une bulle est plus volumineuse; les vésicules sont en général nombreuses; les bulles dans la cavité buccale sont au nombre de 2 ou 3.

La vésicule est une cavité creusée dans l'épaisseur même de l'épiderme.

Au contraire, la bulle est due à un clivage, à un décollement de l'épiderme tout entier sur le derme. Aussi, la vésicule produite par un oédème inter-cellulaire se constitue avec une relative lenteur. Au contraire, la bulle provoquée par un simple décollement est de formation instantanée. Enfin, dans la vésicule herpétique, l'oédème interstitiel et la pénétration du virus dans les cellules frappent celles-ci de dégénérescence, de nécrobiose. Les cellules sont hypertrophiées; c'est la dégénérescence ballonisante de Unna.

Une coupe histologique de muqueuse ou plus exactement de peau nous montre les différentes couches de l'épiderme dont la dernière assise les cellules basales, reposent sur le derme, sur le corps papillaire.

Une coupe de vésicule herpétique est fort différente. Le sac épidermique est compris entre les différentes couches de l'épiderme. On voit en particulier que les couches inférieures de Malpighi, les cellules génératrices basales, séparent complètement la vésicule du derme sous-jacent.

Au contraire, une coupe de bulles, montre que la couche de Malpighi toute entière est soulevée, qu'elle est décollée dans sa totalité du derme.

Enfin, dans la lésion aphteuse, on trouve les mêmes atteintes cellulaires du corps muqueux que dans la lésion herpétique, mais, en plus, on trouve des lésions des petits vaisseaux du derme superficiel. Il s'agit de lésions d'artério-capillarite ou thrombo-phlébite. Nous verrons qu'au cours des grandes aphtoses ces lésions peuvent atteindre de très gros vaisseaux.

Ainsi, la vésicule n'entraînant qu'une destruction de l'épiderme, destruction très superficielle, disparait sans laisser de cicatrices. L'aspect clinique de la lésion élémentaire de l'herpès est typique, surtout lorsqu'il s'agit d'une localisation extra-buccale.

Les vésicules de l'herpès ressemblent à de petites perles; elles contiennent un liquide clair, transparent. Elles se groupent en bouquets d'une dizaine d'éléments, et c'est cette disposition, ce groupement, qui est le signe capital de l'herpès. Les vésicules assez rapprochées les unes des autres finissent par confluer, par se réunir. Elles forment alors une phlyctène aplatie dont le contour micro-polycyclique est très évocateur. Quelques vésicules aberrantes et isolées prolongent toujours le bouquet. Toutes ces vésicules sont cernées par un liseré rouge vif ou reposent sur un placard érythémateux légèrement infiltré qui précède de quelques heures l'éruption caractéristique.

Cette éruption s'accompagne d'élancements, de prurit, de fourmillements, de brûlures, parfois de véritables douleurs.

Au total, on ne peut confondre cliniquement les affections vésiculeuses avec les affections bulleuses.

Mais, tandis que sur la peau l'épithélium se dessèche et forme une croûte, dans la bouche l'épithélium disparaît très rapidement entraîné par la salive. La lésion se présente alors sous la forme d'une ulcération extrêmement superficielle dont le contour est micro-polycyclique. C'est l'aspect du bord de ces ulcérations et la présence de quelques éléments aberrants qui permettent de soupçonner l'origine herpétique.

S'il n'y a pas de nouvelles poussées, les lésions herpétiques guérissent spontanément en 8 à 15 jours. Autrement dit, elles ont une évolution cyclique.

Ces lésions ont des sièges de prédilection, en particulier les lèvres, la région péri-buccale, le pourtour narinaire, mais aussi les régions génitales. Elles s'accompagnent toujours d'une adénopathie. On a voulu isoler des formes cliniques différentes en évoquant les diverses étiologies ou plutôt les diverses causes déclanchantes. En fait, il s'agit toujours de la même maladie consécutive au même virus.

C'est ainsi qu'on a isolé l'herpès traumatique que vous connaissez bien. Chez certains sujets, 24 ou 48 heures après une intervention, souvent une simple avulsion, apparait sur la lèvre un herpès à l'endroit où les instruments ont tiraillé les téguments. Il s'agit, en général, d'un bouquet de vésicules peu important, à cheval sur la lèvre muqueuse et le bord cutané, et qui se recouvre rapidement d'une croûte; mais celle-ci est fragile et la lésion suinte, car il est classique de dire que l'herpès pleure. Cette lésion est peu douloureuse. L'herpès réflexe est une forme que nous connaissons bien également; elle accompagne une irritation alvéolo-dentaire, aigue, une éruption dentaire, une pulpite, des soins, par exemple la pose d'un pansement arsénical.

L'herpès récidivant est une forme qui se caractérise par la répétition à intervalles variés mais toujours au même endroit de poussées d'herpès. Le plus fréquent est l'herpès cataménial qui siège surtout à la lèvre, mais aussi au niveau de la sphère génitale, des fesses, des doigts et qui dure autant que l'activité ovarienne de la femme.

Dans d'autres cas, il s'agit d'un herpès récidivant de la face entretenu par une épine irritative dentaire et il suffit de supprimer cette épine pour voir disparaître cette affection gênante.

Les herpès récidivants soulèvent des problèmes complexes sur l'immunité et sur l'évolution des anticorps; mais en plus, ils s'accompagnent de douleurs violentes, d'une phase prémonitoire de somnolence et d'une réaction lymphocytaire du liquide céphalo-rachidien.

Enfin, l'herpès accompagne ou précède de nombreux états infectieux ou toxiques. Il est extrêmement fréquent au début ou à la phase critique de la pneumonie franche aigue, à tel point qu'il devient un symptôme de la maladie. Il est banal également au cours de la grippe, au cours de la méningite cérébro-spinale et Levaditi, en France, a fait du virus de l'herpès l'agent causal de l'encéphalite épidémique de Von Economo. Mais ce qui va vous interesser plus encore est la stomatite herpétique dont le tableau est bien différent.

Il s'agit d'une maladie autonome ayant tous les caractères d'une maladie infec-

Herpès de la lèvre

tieuse qui survient surtout au cours de l'enfance, mais aussi chez l'adulte jeune.

Le début est brutal, solennel, marqué par un malaise général accusé, par une céphalée intense. La température est d'emblée très élevée (39.5 à 40°). Toute la muqueuse buccale est oédématiée, d'un rouge intense, extrêmement douloureuse, entrainant une dysphagie pénible. Puis au bout de 24 à 48 heures apparait l'éruption. En général, celle-ci n'est pas vue sous sa forme première de vésicules groupées en bouquets multiples, mais sous la forme d'érosions nombreuses dont l'aspect et le siège sont très évocateurs. Ce sont des érosions à bords dentelés, polycycliques. Elles apparaissent toutes en même temps, au même instant, et elles ont d'emblée la taille définitive qu'elles conserveront jusqu'à la fin de la maladie. Autrement dit, elles n'ont pas le caractère extensif qu'ont la plupart des ulcérations des diverses autres stomatites et elles ne sont pas sphacélisantes. Enfin, leur siège a un très grand intérêt. On trouve ces ulcérations un peu partout dans la cavité buccale, sur les lèvres, les joues, la langue, mais les lésions les plus constantes et les plus graves sont postérieures: au niveau des amygdales, sur le voile, la luette, sur la paroi postérieure du pharynx, sur le palais dur, en regard des dernières molaires où elles sont souvent caractéristiques. Au total, il s'agit d'une stomatite généralisée et tout autant d'une angine hérétique que d'une stomatite. Les gencives sont également tuméfiées mais elles ne sont pas fongueuses; elles ne sont pas décollées, les languettes inter-dentaires ne sont pas amputées. On trouve seulement de petites ulcérations punctiformes très superficielles, assez rares, groupées par petits bouquets de 2 à 3 éléments n'ayant pas tendance à confluer. L'adénopathie sous-maxillaire et jugulo-carotidienne est constante.

L'évolution se fait le plus souvent en un temps. En 8 à 10 jours, mais il peut y avoir d'autres poussées. Dans l'ensemble, malgré l'aspect alarmant de cette forme, la guérison totale survient. Les ulcérations disparaissent sans laisser de traces.

Cette stomatite herpétique est contagieuse. Récemment, à l'hôpital, j'ai vu une femme qui consultait le lundi, alors que le mari devait se présenter le mardi et les deux enfants le jeudi. Tous étaient atteints d'une stomatite herpétique et mon assistant, le Dr Grignon, devait présenter quelques jours plus tard un magnifique bouquet d'herpès des lèvres. La maladie est donc inoculable.

Au total, dans sa forme typique, le diagnostic se fait aisément: début brutal, température élevée d'emblée, lésions maxima et stables, aspect polycyclique des érosions dont certaines localisations sont caractéristiques. Enfin, souvent lésions cutanées ou labiales qui apportent un élément complémentaire de grande valeur.

Les diagnostics différentiels les plus fréquents sont à faire avec la stomatite streptococcique fréquente chez l'enfant appelée en France "stomatite impétigineuse de Bergeron et Comby." Bien que l'agent causal le plus fréquent en soit le streptocoque, ces stomatites peuvent être dues également au staphylocoque. C'est une stomatite du jeune âge ou de l'adolescence, mais le vieillard n'en n'est pas exclus. A l'inverse de la stomatite herpétique, il s'agit d'une stomatite antérieure n'atteignant jamais les régions profondes de la cavité buccale. C'est une stomatite vestibulaire; c'est surtout une labialite et la plupart du temps, on trouve des lésions cutanées caractéristiques de l'impétigo. Il s'agit encore de vésicules, mais dont le liquide se trouble rapidement. Ces vésicules ne sont pas distribuées en bouquets, elles sont éparses. Facilement auto et hétéro-inoculables, les lésions s'étendent rapidement, au hasard. Les vésicules crèvent et se recouvrent d'une croûte jaunâtre mélicérique. Le pourtour des lèvres, le menton, le seuil narinaire, les lèvres elles-mêmes sont couvertes de croûtes, puis la propagation se fait vers la muqueuse buccale et l'on trouve des ulcérations superficielles irrégulières, étendues, recouvertes d'un enduit diphtéroide jaune sale, très adhérent, qu'on

compare à des taches de bougie. La muqueuse au pourtour des ulcérations, est très oédématiée, très infiltrée. Les languettes inter-dentaires sont turgescentes, fongueuses. Si les lèvres sont surtout atteintes, on trouve pourtant des lésions au fond des culs-de-sac vestibulaires à la partie antérieure du palais, sur la langue.

Les signes généraux sont peu importants et l'évolution n'est pas cyclique comme dans la stomatite herpétique. Au total, on ne peut confondre les deux affections.

Le diagnostic avec les gingivites ulcéro-membraneuses est également facile. La lésion primaire est une ulcération qui siège au sommet d'une ou de plusieurs languettes inter-dentaires. Cette ulcération d'abord punctiforme s'étend peu à peu, tronquant la languette hypertrophiée qui se décolle et flotte. Les ulcérations friables, saignotantes, se recouvrent d'un enduit grisâtre et fétide, elles sont sphacélisantes. Elles s'étendent, envahissant plus ou moins rapidement toute la collerette gingivale. Dans les cas graves, elles gagnent la joue, la langue, les piliers antérieurs. La température n'atteint jamais celle de la stomatite herpétique. L'évolution n'aboutit à la période d'état qu'en quelques jours, son évolution n'est pas cyclique et l'allure de la maladie est bien différente d'autant plus que l'on trouve les diverses étiologies: soit l'évolution difficile d'une dent de sagesse, c'est la stomatite odontiasique unilatérale; soit une origine médicamenteuse, c'est la stomatite bisthmutique ou mercurielle; soit une maladie du sang, c'est une agranulocytose ou une leucose, soit enfin la stomatite polymicrobienne d'allure épidémique. Il faut noter que ces stomatites ulcéro-membraneuses récidivent facilement, qu'elles donnent des lésions sphacéliques et nécrosantes, qu'elles produisent des délabrements gingivaux qu'on ne voit jamais dans les stomatites herpétiques.

Chez l'enfant, la stomatite herpétique s'isole difficilement de la stomatite d'évolution dentaire. Ce diagnostic soulève d'ailleurs des discussions de principe. Pendant les périodes d'évolution dentaire, l'enfant présente souvent, surtout lorsque plusieurs dents évoluent en même temps, une stomatite d'allure particulière. La muqueuse gingivale s'oédématie, se congestionne, recouvre les couronnes des dents, déjà en place sur l'arcade. Sur les capuchons muqueux qui masquent les dents en évolution, naissent brutalement des bouquets de vésicules qui deviennent des ulcérations plus ou moins polycycliques. Pour les uns, il s'agit d'un herpès réflexe; pour d'autres, il s'agit d'une stomatite érythématoaphtoide. Il est difficile de conclure. J'ai vu personnellement des stomatites d'évolution pour lesquelles la présence de bouquets évocateurs d'allure cyclique, la contagion plus ou moins familiale faisaient penser à l'herpès. Etant donnée l'unicité des différentes manifestations de l'herpès, je ne vois pas pourquoi on ne dirait pas "stomatite herpétique." Par contre, dans certains cas, on trouve des lésions qui évoquent l'aphte. Le diagnostic est alors impossible sans examens de laboratoire.

Les différents aspects de l'herpès que nous venons de décrire ne correspondent pas à des états pathologiques différents.

Il ne s'agit pas tantôt d'une affection de la peau, tantôt d'une affection de la muqueuse, mais de la même maladie, de la maladie herpétique. Il s'agit d'une maladie autonome, provoquée par un virus, que l'on connait bien maintenant, et dont l'étude expérimentale poursuivie depuis 50 ans a servi de modèle à l'étude de la plupart des virus.

On connaissait depuis longtemps les rapports cliniques entre la kératite dendritique de l'homme et l'herpès. Mais c'est seulement en 1913 que Gruter eut l'idée d'inoculer à la cornée d'un lapin un prélèvement effectué sur un oeil humain. Il provoqua chez le lapin une kératite expérimentale qui fut à son tour inoculée à la cornée d'un aveugle. Puis Lowenstein, partant d'une lésion cutanée humaine fit la même expérience et montra l'unicité de la kératite dendritique

et de l'herpès cutané. Il montra également que le virus peut être entretenu indéfiniment sur la cornée du lapin.

Des études successives et passionnantes poursuivies dans tous les pays permirent de découvrir successivement:

1° que l'herpès est auto et hétéro-inoculable. Il s'agit donc d'une maladie infectieuse.

2° que certains lapins atteints de kératite herpétique meurent d'une encéphalite.

3° que la maladie herpétique est due à un virus à la fois responsable de la stomatite aigue, des différentes formes cutanées et d'une forme souvent mortelle du nourrisson qui évolue comme une septicémie avec hépatite, méningo-encéphalite et gingivo-stomatite. Au total, on peut concevoir les faits de la façon suivante:

La très grande majorité des individus contracte la maladie entre 3 et 5 ans. Dans 99% des cas, cette primo-infection est inapparente ou se manifeste sous l'aspect d'un état fébrile qu'on ne peut classer. Comme pour la poliomyélite, la seule preuve de la contamination est la présence d'anticorps spécifiques. Mais dans 1% des cas, la maladie infectieuse se déclare sous un aspect particulier: c'est la stomatite et l'angine herpétiques.

Le virus herpétique est un virus de grosse taille; 150 à 220 au donc visible au microscope optique; il est assez résistant, mais ne pousse pas en milieux artificiels semblables à ceux qu'on emploie pour les bactéries. En effet, le propre des virus est de ne pouvoir vivre qu'à l'intérieur même des cellules de l'organisme. Le virus, de petite taille par rapport aux bactéries, est une parasite intra-cellulaire obligatoire; il pénètre dans la cellule, il envahit le noyau. La chromatine nucléaire est chassée à la périthérie et l'on voit au centre du noyau une masse non homogène, un ensemble de particules qu'on appelle l'inclusion.

Le microscope électronique permet de dissocier cette inclusion et l'on aperçoit dans un feutrage assez lache des particules rassemblées en petits amas qui sont le virus.

Cet envahissement cellulaire se fait à bas bruit. Le virus disparait même pen-

Aphtose de la muqueuse

dant quelques heures: c'est le phénomène de l'éclipse. Puis il réapparait brutalement, croissant à une vitesse logarithmique. Ainsi, quand la maladie éclate cliniquement, toutes les cellules qui seront détruites sont déjà parasitées par le germe qui s'est multiplié pendant l'incubation. La maladie que nous voyons correspond donc à une destruction cellulaire contre laquelle nous ne pouvons plus rien. Nous n'assistons pas à la maladie mais à une lutte de l'organisme qui élimine les cellules mortifiées. On comprend ainsi que les lésions soient maxima d'emblée, que l'évolution soit cyclique, que nos thérapeutiques soient théoriquement inactives. Mais un autre fait est capital; toutes les particules ne sont pas virulentes; certaines persistent, endormies, dans des cellules vivantes et ne trouvent leur virulence qu'à la faveur de phénomènes contingents. On peut ainsi expliquer les récidives. En fait, cette seule explication est insuffisante, car il s'agit du problème plus complexe d'adaptation des virus.

Il est évident que certains individus portent en permanence le virus de l'herpès. Mais on assiste à une variation périodique de la virulence. C'est ainsi que des souches authentiques d'herpès sont inactives sous la forme de souches d'un virus salivaire kératogène qui n'est qu'une variante du virus herpétique. Or ce virus peut récupérer son pouvoir pathogène. Mieux que cela, on sait actuellement qu'une même cellule peut être l'hôte de plusieurs virus. Ceux-ci associent leurs caractères ou, au contraire, l'un d'eux peut être détruit par un autre et celui-ci se trouve réactivé. Il s'agit d'un véritable phénomène d'interférence, d'un blocage, avec formation de facteurs nouveaux.

De plus, on assiste à des variations du niveau des anticorps. Ceux-ci sont élevés après une poussée herpétique, puis ils disparaissent progressivement. Enfin, comme pour toutes les maladies, la résistance du malade est fonction de son état général ou de l'état local de ses tissus. Ainsi s'explique la stomatite d'évolution, les herpès cataméniaux, les herpès symptomatiques.

Il reste encore un fait troublant. Pourquoi l'herpès récidive-t-il toujours au même endroit?

Le virus est à l'origine cutané. Fixés à un groupe cellulaire, on suppose que ces éléments non virulents retrouvent, sur place, un pouvoir pathogène périodique. C'est le problème de l'immunité tissulaire étudié par Levaditi et son école.

Mais, en fait, le virus de l'herpès n'est pas uniquement cutané. Des expériences nombreuses montrent qu'il s'adapte au système nerveux; ainsi un lapin inoculé au niveau de l'oeil meurt d'une encéphalite. C'est dans les cellules nerveuses qu'on entretient, au laboratoire, le virus. Enfin, les herpès récidivants s'accompagnent presque toujours d'un syndrôme méningé, d'une somnolence, d'une réaction lymphocytaire, de névralgies violentes. Les modifications du liquide céphalo- rachidien prouvent que la méningite est une réalité. Le virus est donc adapté au système nerveux et l'a envahi. D'ailleurs, chez le lapin, quand on sectionne le nerf optique après avoir inoculé la cornée, on empêche la propagation de l'infection virale. Inversement, quand on pratique une inoculation cérébrale, on assiste à une propagation centrifuge. Enfin, histologiquement, on trouve de grosses altérations au niveau des ganglions rachidiens, de la moelle, des ganglions sympathiques. Le virus est neurotrope et l'on supposer, qu'après la primo-infection, il vit à l'état latent dans les cellules nerveuses retrouvant de temps en temps sa virulence. Mieux que cela, des observations récentes, dont le nombre augmente rapidement dans tous les pays, montrent que le virus perd même sa spécificité neuro-ectodermique. Je vous ai parlé des formes mortelles du nourrisson, qui s'accompagnent de lésions hépatiques et rénales et correspondent à une véritable septicémie virale.

Malgré ces travaux considérables, il reste de nombreuses incertitudes. Tous

les laboratoires travaillent à ce problème qui est à base de l'étude des virus. Il n'est donc pas sans intérêt de savoir ce que sont ces travaux.

Si, à l'origine, le lapin fut l'animal de choix, on emploie actuellement pour le diagnostic un matériel plus simple, plus sensible, et moins onéreux, le souriceau de moins de 48 heures. Mais pour l'étude approfondie, pour la culture du virus, et l'étude des anticorps, on se sert de cellules de reins de singe, de cellules d'une tumeur qu'on appelle "hella cell" et enfin de la membrane chorio-allantoidienne de l'oeuf de poule.

Eh bien à quoi vont servir tous ces renseignements? D'abord à préciser un diagnostic dans les cas difficiles. Ainsi une cuti-réaction pratiquée avec le liquide amniotique d'un embryon de poulet infecté donne une réaction érythémateuse en 24 ou 48 heures chez le sujet qui présente des anticorps herpétiques. Mais nous possédons tous des anticorps herpétiques en plus ou moins grande quantité et cette réaction n'est pas employée en médecine humaine.

Par contre, on peut, par les méthodes de culture des tissus, soit d'épithélium de cornée de lapin, soit de cellules rénales humaines, de cellules de la souche hella ou encore par inoculation au souriceau avoir une réponse certaine en 8 à 20 heures. On aperçoit les inclusions nucléaires éosinophiles caractéristiques: on peut ainsi différencier l'herpès, l'érysipèle et le zona.

Malheureusement, ces notions passionnantes et fécondes n'ont pas permis jusqu'alors de réaliser de grands progrès en thérapeutique. Théoriquement, nous sommes incapables d'agir sur le cours d'une maladie virale puisque, cliniciens, nous assistons à la fin de la maladie. Cela n'est pas grave quand il s'agit d'une stomatite de primo-infection, puisque celle-ci va guérir spontanément en quelques jours sans laisser de traces. Mais le fait est déprimant, quand il s'agit d'un herpès récidivant et douloureux qui affecte sérieusement certains sujets et retentit sur leur caractère. De plus, les ulcérations permanentes sont une porte d'entrée ouverte à d'autres infections qui peuvent être graves. Enfin, le fait est sérieux pour les formes septicémiques de l'enfant toujours mortelles.

Eh bien, nous ne devons pas succomber à un septicisme de principe et divers actes thérapeutiques ne sont pas inutiles. Si la pénicilline est absolument inactive, les antibiotiques du groupe 2: auréomycine, terramycine, spiramycine, ont une action clinique certaine.

Agissent-ils contre le virus lui-même? Cela n'est pas certain. Mais en tous cas, ils agissent contre l'infection secondaire constante dans la cavité buccale. On peut les donner par voie générale en comprimés, à la dose la 1 à 2 grammes par jour. On peut aussi faire sucer des pastilles d'auréomycine à 0 gr. 10. Les colorants, comme les sels d'acridine, comme la gonacrine, sont extrêmement calmants. Mais le médicament local le plus actif est l'ammonium quaternaire. On emploie en France le Biocidan à 1% ou en pastilles. En quelques heures, les ulcérations deviennent indolores et disparaissent que ce soit sur la peau ou sur la muqueuse. Les vaccins et les sérums n'ont aucune action; il semble que l'A.C.T.H. et les corticoides aggravent les lésions. Par contre, nous ne sommes pas désarmés devant les formes récidivantes; on peut ainsi employer la vitamine C en intraveineuses à raison de 1 gr. par jour pendant 20 jours. On a obtenu des résultats avec la vaccination antivariolique répétée plusieurs fois. Depuis longtemps, on a employé l'auto-hémo-thérapie, l'urotropine, le salycilate de soude, l'hyposulfite de soude en cachets, à raison de 3 à 5 grs par jour, pendant plusieurs semaines.

Enfin, sans que nous ayons une longue expérience, il semble qu'on puisse formuler des espoirs sérieux sur les gamma globulines qui apportent, toutes prêtes, les propriétés immunologiques.

Quand on isole les globulines du sérum humain par électro-phorèse, on s'aperçoit que les protéines, qui ont la plus faible

mobilité au P.H. 8.6, sont celles qui contiennent les anticorps. Ce sont les gamma globulines. Elles sont surtout actives, lorsqu'elles proviennent d'un convalescent, d'un sujet hyperimmunisé. Elles ont un pouvoir préventif et un pouvoir curatif.

Lorsqu'elles sont extraites par le méthode Kohn (alcool à basse température) elles ont une concentration 25 fois plus grande que celle du plasma d'origine. Elles sont présentées dans des ampoules conservées à 4°; on les emploie uniquement en injections intra-musculaires avec une tolérance parfaite et sans crainte de transmission d'une hépatite à virus. Les doses sont de 30 à 40 mmgr. par kgr de poids du malade.

Par certains cotés, la maladie aphteuse dont je vais vous entretenir maintenant se rapproche de la maladie herpétique. Mais les obscurités et l'insuffisance de nos connaissances sont encore plus accusées. En particulier, nous ne connaissons pas le virus de l'aphte humain. La maladie humaine n'est pas inoculable, elle n'est pas contagieuse; on n'a jamais pu isoler le virus et encore moins le cultiver. Autrement dit, si certains auteurs, comme Touraine, font des diverses manifestations aphteuses une seule et même maladie, dont la cause serait un virus, d'autres auteurs s'opposent complètement à cette conception.

Je voudrais d'abord montrer l'imprécision de nos termes qui prouve l'imprécision de notre pensée.

Le terme de stomatite aphteuse devrait être réservé à la stomatite qui accompagne la fièvre aphteuse des bovidés. Or, la stomatite aphteuse provoquée par un virus isolé et bien connu est exceptionnelle chez l'homme; de plus, elle ne se traduit pas par une localisation buccale primitive et isolée. Dans les cas authentiques, controlés par l'isolement du virus, les localisations primitives siègent au niveau des pieds et des mains. Une infection générale se déclare et la stomatite aphteuse spécifique, quand elle parait, n'est pas secondaire. De plus, le contact indirect est nul; l'homme s'infecte au contact d'un animal par l'intermédiaire d'une blessure. Les stomatites, que nous voyons, ne sont donc pas des stomatites aphteuses, mais des aphtoses, des stomatites aphtoides.

De ces stomatites aphtoides, nous ne savons rien. Nous les connaissons cliniquement, nous supposons qu'elles sont dues à un virus voisin du virus de la stomatite des bovidés, mais il ne s'agit là que d'une hypothèse.

La lésion élémentaire de l'aphte est une vésicule qui contient un liquide louche, c'est donc une vésico-pustule. Comme la vésicule herpétique, elle crève rapidement et donne une ulcération dont les caractères sont différents de ceux de l'herpès.

En effet, l'ulcération aphteuse typique est petite, arrondie de la taille d'une petite lentille, mais elle est relativement profonde. Elle est cupuliforme. Elle se recouvre rapidement d'un enduit épais, jaune beurre frais, ou gris. Elle est cernée par un liseré érythémateux; elle est extrêmement douloureuse. C'est une douleur locale, spontanée, irradiant vers le cou, vers l'oreille. C'est une brûlure, une cuisson; elle est exagérée par les acides; elle rend la parole, la mastication difficiles. Cet élément douleurs est capital: il signe l'aphte et lui a fait donner son nom.

Fait essentiel, l'aphte est isolé; il ne se rassemble pas en bouquets comme l'herpès. Dans cette forme banale que nous connaissons bien, on trouve un seul élément, ou 2 ou 3, qui siègent sur la pointe de la langue, dans un cul-de-sac vestibulaire, le long d'un frein des lèvres, à la face interne des joues. La lésions disparait en 4 à 8 jours, elle a été précédée de troubles digestifs, d'un peu d'asthénie. Comme pour l'herpès, on a isolé des formes différentes selon la cause déclanchante.

La forme allergique ou traumatique succède à l'ingestion de certains aliments: miel, raisins secs, fraises, noix, fromage, tabac.

La forme endocrinienne est conditionnée par les règles.

La forme infectieuse est liée à des troubles gastre-intestinaux.

La forme réflexe est en rapport avec l'éruption dentaire. C'est la forme érythémato-aphtoïde de l'éruption dentaire.

Comme pour l'herpès récidivant, ces formes sont banales; elles sont peu graves mais gênantes et finissent par gâcher l'existence de certains malades. Quoi qu'il en soit, le diagnostic clinique est facile.

Mais le problème se complique. En effet, à côté de cet aphte classique, petite lésion cupuliforme caractéristique, on trouve des aphtes géants, vastes ulcérations creusantes d'aspect sphacélique. Les bords en sont épais souvent décollés et flottants. La réaction de la muqueuse est intense; l'ulcération siège sur un vaste placard érythémateux infiltré.

Une de nos malades présentait depuis 2 ans un aphte géant du bord muqueux de la lèvre qui disparaissait pendant 8 jours au moment des règles, pour réapparaître après. Le problème se complique encore; en effet, comme il y a une stomatite herpétique, maladie infectieuse aigue, il y a une stomatite aphtoïde, maladie infectieuse d'allure épidémique.

Elle aussi débute brutalement, par des frissons, des céphalées, une température à 40°. Puis au bout de 2 ou 3 jours, apparaît la stomatite annoncée par une vive cuisson de la muqueuse buccale. Les vésico-pustules crèvent et on trouve des ulcérations à contours non pas micro-polycycliques, mais macro-polycycliques. L'aspect est plus sale, plus sphacélique que dans l'herpès, les bords sont plus épais, l'enduit gris qui les recouvre est plus adhérent. La muqueuse est plus infiltrée, l'adénopathie est plus importante. De plus, les ulcérations sont plus antérieures, il s'agit d'une stomatite beaucoup plus que d'une angine, comme dans l'herpès.

Enfin pour troubler notre esprit, il existe une maladie générale, non pas aigue mais désespérément chronique évoluant pendant des années, par poussées incessantes, et qu'un dermatologiste français, Touraine, a appelé la grande aphtose.

Non seulement la cavité buccale est atteinte, mais l'oésophage, l'estomac, l'anus, la peau, les yeux, les vaisseaux, les viscères. Il s'agit d'une maladie grave dont je vais vous rapporter une observation personnelle.

Pendant 7 ans, j'ai traité un malade à l'hopital Laennec.

Pendant 7 ans, des thérapeutiques variées ont été prescrites, parfois suivies de rémissions importantes, parfois sans succès. Des améliorations se sont maintenues pendant des périodes atteignant parfois 3 à 4 mois pour être toujours suivies de nouvelles poussées. L'infection a débuté par des ulcérations aphteuses typiques, siégeant sur la langue, les joues, les lèvres. Mais au cours de l'évolution, on a pu observer des ulcérations profondes, nécrotiques, affreusement douloureuses dont des photographies précisent les caractères.

Au début, elles étaient buccales, puis elles furent buccales et anales, puis digestives. Les récidives évoluaient sans ordre, irrégulièrement, entraînant une atteinte marquée de l'état général avec température, amaigrissement, asthénie. En août 55, ce malade a perdu 7 kgrs en 3 semaines. De plus, apparurent des manifestations associées, une furonculose, un abcès de la marge de l'anus, une érythrodermie, un eczéma péri-labial. Deux faits sont à retenir: le rythme saisonnier des poussées graves, la fragilisation de l'épiderme au staphylocoque.

Tout a été tenté au point de vue thérapeutique.

Localement: mise en état de la bouche
antibiotiques locaux
topiques divers
radiothérapie sur les lésions anales.

Comme traitement général: thérapeu-

tique désensibilisante, antihistaminiques de synthèse

auto-hémo-thérapie
cortisone
vitamines diverses
thérapeutiques anti-infectieuse

Certains essais ont été suivis d'aggravation: des injections de cyanure de mercure ont un jour rapidement nettoyé les lésions, mais ont entraîné un moelena.

La cortisone, le cortancyl, ont provoqué, après une amélioration spectaculaire, un eczéma tenace.

Nous étions très inquiets au sujet de ce malade qui dépérissait lentement, d'autant plus qu'un de nos confrères venait de publier un cas semblable ayant évolué vers la mort après une hémorragie digestive cataclysmique.

Les antécédents du malade ne semblaient guère apporter de renseignements valables, puisqu'on notait simplement une pleurésie tuberculeuse 10 ans auparavant et des réactions violentes aux cuti-réactions à la tuberculine.

Un de nos collègues des Hôpitaux, le Dr Jacquelin, nous assura qu'il s'agissait d'une affection seconde à une tuberculose atypique. Cet auteur a été frappé, en effet, par la fréquence remarquable avec laquelle de nombreux malades atteints de tuberculose discrète, bénigne, de forme atypique, présentent dans le cours de leur longue évolution morbide de multiples infections par les pyogènes, surtout staphylocoques et colibacilles, mais aussi pneumocoques et streptocoques et infection virales. Un test tuberculinique à 1/10 de mmgr d'Alt tuberculin donna une réponse hyper-allergique coincidant avec une brève exacerbation suivie d'une sédation des aphtes. La tuberculino-thérapie fut entreprise à raison d'une injection hebdomadaire à doses très faibles. La dose la plus élevée fut de 1/3000 de gramme. Il y eut encore des alternances d'amélioration et de poussées pendant lesquelles le malade recevait de l'hydrocortisone. Depuis un an, ce malade semble guéri. Pour la première fois depuis 7 ans, il a repris son travail.

Bien que l'aphtose soit rare, cette observation n'est pas exceptionnelle.

Du point de vue dogmatique, le problème est passionnant. Grâce aux antibiotiques divers, la mortalité par la tuberculose diminue, mais le nombre des tuberculeux ne diminue pas, au contraire. Il est vraisemblable qu'on verra augmenter encore le nombre de ces tuberculoses larvées, discrètes, jugulées mais non guéries par nos thérapeutiques. On peut alors comprendre pourquoi le nombre des aphtoses semble augmenter.

Mais là encore, ne pensons pas aux cas exceptionnels. Les aphtes banaux isolés ou peu nombreux disparaissent rapidement quand on touche les lésions avec un ammonium quaternaire ou un topique banal comme l'acide trichloracétique. Les aphtes géantes déjà plus tenaces guérissent avec des pulvérisations locales à l'hydro-cortisone. Quand les récidives sont fréquentes, on peut donner des comprimés de delta hydro-cortisone ou hydro-cortancyl en même temps qu'on fait sucer des pastilles d'auréomycine.

Enfin, sans vouloir employer la tuberculine, comme dans la grande aphtose, on peut modifier le terrain lorsque l'affection est pénible par sa ténacité. On pourra alors essayer les anti-histaminiques de synthèse, les petites transfusions, l'auto-hémo-thérapie, la vitamine C à haute doses, enfin les gammas globulines.

Je vais maintenant conclure. L'herpès et l'aphte constituent deux états morbides assez semblables dans les formes diverses de leurs manifestations. Il faut remarquer que les lésions élémentaires en sont simples, d'un diagnostic facile, mais que certaines formes sont extrêmement complexes et d'un diagnostic difficile sinon impossible sans le laboratoire.

L'herpès est dû à un virus que nous connaissons bien, tandis que pour l'aphte nous formulons seulement des hypothèses. Mais il est intéressant de savoir

que récemment, le Dr Werner, dans un congrès qui s'est tenu à New York, a signalé sous le titre "virus en quête de maladie" qu'en quelques mois, les bactériologiques venaient d'isoler dans la salive 17 nouveaux virus qui ont été groupés sous le nom de "VIRUS A.P.C." (Adenoipharynx, conjonctive). Il est possible que l'un d'eux soit celui de l'aphtose.

Ainsi, et ce sera notre conclusion, la pathologie humaine subit une évolution considérable, tandis que les germes animés ou inanimés modifient leur physiologie. Nous sommes forcés d'admettre que cette évolution, dont nous ne pouvons prévoir l'avenir, est due en grande partie à l'action des nouvelles thérapeutiques et en particulier aux antibiotiques.

La concurrence vitale joue entre les différents germes; quand nous faisons disparaître l'un d'eux, d'autres se développent et nous ne savons jamais dans quelle aventure nous nous lançons.

Au Congrès de Sherbrooke

Remise d'un diplôme de professeur honoraire de l'Ecole Dentaire de Paris au docteur Paul Geoffrion, vice-doyen de la Faculté dentaire de l'Université de Montréal.

De g.à.d.: les docteurs Roger Bataille, de Paris; André Charest, président de la Société de Stomatologie de Québec; Victorien Dubé, président du Collège des Chirurgiens-Dentistes de la province de Québec; Paul Geoffrion.

ÉDITORIAL

Réunion plénière de l'A.D.C., à Winnipeg

La réunion annuelle des membres du Bureau des Gouverneurs, à l'occasion du Congrès de l'Association, est un évènement d'importance pour la profession dentaire.

Comme le veut la constitution de l'Association dentaire canadienne, les Collèges de chacune des dix provinces du Canada délèguent un représentant pour chaque groupe de cinq cents dentistes ou pour chaque fraction de cinq cents. C'est ainsi que la province de Terre-Neuve, qui compte trente-cinq dentistes, a droit à un représentant et que la province d'Ontario, qui compte 2,330 dentistes, possède cinq gouverneurs au Bureau.

Nous disions au début de cet article que cette réunion annuelle a beaucoup d'importance pour la profession dentaire canadienne parce que, comme le veut toujours la constitution, le Bureau des Gouverneurs a comme rôle unique d'élaborer la politique de l'Association sur toutes les phases de l'exercice dentaire au Canada; le Comité Exécutif de l'Association a la seule fonction de mettre en acte les directives dictées par le Bureau.

On peut s'imaginer sans trop d'effort la complexité des nombreux problèmes qui confrontent un groupement professionnel tel que le nôtre; en effet, nous sommes chargés de la santé dentaire de notre population et, de ce fait, nous avons des rapports fréquents avec les autorités gouvernementales du pays.

Mentionnons les principales questions pour lesquelles l'Association doit définir des principes qui favorisent et le public et la profession dentaire elle-même: relations extérieures, assurance-santé, services auxiliaires de la profession (hygiénistes, techniciens, etc), services dentaires hospitaliers, recherches, enseignement, législation touchant la profession sur le plan fédéral et les plans provinciaux, étiquette professionnelle, Journal de l'Association, santé dentaire publique, spécialités de la profession, nomenclature, finances, etc.

Les problèmes soulevés par ces questions changent continuellement et il faut que la profession dentaire soit sans cesse en éveil pour leur trouver des solutions avant que le gouvernement ou que la tradition ne leur en appliquent qui soient préjudiciables à l'intérêt général.

L'impression qui se dégage de la réunion des gouverneurs de l'A.D.C., tenue en juin dernier à Winnipeg, montre que l'Association a atteint un stage de maturité qui lui permet d'aborder l'étude des problèmes avec confiance et sérénité. Ses finances sont en bon état et son fonds de réserve grossit d'année en année. Elle a comme présidents de comités des hommes qui accomplissent la même besogne depuis plusieurs années et qui sont aguerris par l'expérience contre les tendances nouvelles prises par les questions qui les préoccupent. Elle a comme secrétaire général un confrère qui consacre son immense talent et tout son temps à la bien servir. Le travail de l'assemblée s'effectue donc dans un climat salutaire et proprice au progrès de la profession.

Parmi les décisions prises par les gouverneurs au cours de leurs assisses de 1957, les principales se situent dans le domaine de l'assurance-santé, de l'enseignement, des finances, des services

auxiliaires, des services hospitaliers, de l'hygiène publique.

Assurance-santé — Il y a quelques années, quand le gouvernement fédéral a commencé à se préoccuper de la question de l'assurance-santé, l'A.D.C., après avoir étudié à fond le problème, avait soumis au gouvernement des principes de base pour régler l'établissement de cette mesure. Le principe le plus important spécifiait qu'à cause de divers facteurs, les services dentaires ne devraient être offerts, au début, qu'aux enfants de moins de six ans et que ces services devraient être rémunérés sur la base des honoraires fixés par le Ministère des Affaires des Vétérans pour le traitement de ses dépendants. Cette année, l'Association a réintéré ces principes et suggéré, en regard de l'augmentation du coût de la vie, une échelle plus élevée pour les honoraires du Ministère en cause.

Enseignement dentaire — Grâce aux représentations répétées de ce comité pour souligner la pénurie toujours croissante de dentistes en regard de la population, trois gouvernements provinciaux ont décidé de consacrer des sommes importantes à la construction d'édifices spacieux qui serviront à la formation scientifique d'un plus grand nombre de dentistes. En Ontario, on est à compléter les plans d'une nouvelle école qui doublera le nombre de ses diplômés, soit 160. En Nouvelle-Ecosse, à Dalhousie, on achève la construction d'un nouvel immeuble qui pourra recevoir deux fois plus d'élèves qu'actuellement. Au Manitoba, le Ministère d'Education, à la suite d'une enquête menée l'an dernier, a décidé de doter son université d'une faculté dentaire; la construction doit commencer incessamment.

De plus, le Comité recommandera aux facultés dentaires d'inclure à leur programme d'études d'autres matières telles que la psychiatrie, etc. Ensuite, le Conseil d'Enseignement dentaire organisera une conférence sur l'enseignement de la déontologie. Enfin, le Conseil a recommandé aux Bureaux provinciaux d'admettre aux examens de licence, sans exiger d'eux un stage dans les facultés dentaires canadiennes, les dentistes du Commonwealth, qui possèdent un diplôme de Bachelor of Dental Surgery.

Finances — Les Bureau des Gouverneurs a décidé de consacrer à son fonds de réserve 10% de son revenu annuel; ce fonds de réserve se chiffre actuellement à quelques $46,000.00.

Services auxiliaires — Ce comité a suggéré au Bureau des Gouverneurs que la profession dentaire canadienne veille elle-même à la formation des futurs techniciens pour qu'elle puisse exercer sur eux un contrôle direct. Ces cours seraient donnés dans les écoles d'arts et métiers.

Services dentaires hospitaliers — Le Bureau des Gouverneurs a établi une solide politique au sujet de l'autonomie des services dentaires dans les hôpitaux.

Hygiène publique — L'Association a décidé d'organiser dans tout le Canada une semaine d'hygiène dentaire pour éveiller à ce problème la population de ce pays. Jusqu'à maintenant, quelques provinces organisaient une semaine du genre et, l'an dernier, la Ligue de Santé du Canada avait patronisé une journée dentaire. En ce faisant, l'A.D.C. veut uniformiser ces manifestations et stimuler les provinces, qui ne font rien dans ce domaine, à encourager leurs gens dans le maintien de l'hygiène dentaire.

Beaucoup d'autres questions ont été discutées à cette réunion et on y a pris des décisions susceptibles d'améliorer l'exercice dentaire au bénéfice des Canadiens et des dentistes eux-mêmes. Le cadre de cet article ne nous permet pas de les énumérer toutes; d'ailleurs, chacun des membres de l'Association recevra sous peu une copie des Délibérations de 1957, où sont consignés tous les rapports des divers comités et les décisions prises à leur sujet.

Gérard de Montigny.

Nouvelles brèves de l'Etranger

Aux INDES.

La Tchecoslovaquie vient de faire don, au gouvernement des Indes, d'une voiture stomatologique complète. Il s'agit d'une véritable clinique permettant l'exécution de tous les travaux, y compris, naturellement, la prothèse.

L'ensemble possède non seulement un générateur d'électricité, mais aussi un réservoir d'eau, ce qui permet d'opérer dans les régions où l'eau manque.

Muni d'un moteur Diesel Skoda, il comporte une salle d'attente et une salle de repos pour deux personnes. Le cabinet de consultations est équipé avec deux Units, un appareil de radiographie, un réfrigérateur, un appareil récepteur de radio, une chambre noire pour le développement de films et l'air conditionné.

Dans la remorque se trouve le laboratoire de prothèse et le générateur d'électricité fournissant tout le courant nécessaire pour opèrer et pour l'éclairage, ainsi que l'eau chaude.

On se rappelle que l'Allemagne de l'Ouest avait déjà fait don aux Indes d'un équipement analogue. (*Jour. All. India Dent. Assoc.*, février 1957).

En U.R.S.S.

Il existe 8,000 Institutions médicales dépendant du Ministère de la Santé Publique, employant plus de 22,000 Médecins, Stomatologistes et Dentistes. En outre, les dispensaires provinciaux occupent un personnel médical de 9,000 personnes, les autres départements du Gouvernement en emploient encore 8,000.

Dans les hôpitaux et polycliniques, les patients sont soignés gratuitement, les invalides et pensionnés reçoivent également des appareils de prothèse. Dans les 95 cliniques stomatologiques indépendantes et les sections chirurgicales des hôpitaux, 1,900 lits sont disponibles pour les traitements dentaires. Dans les villes, chaque praticien traite 3.000 à 3.500 adultes et 2.000 enfants.

Alors que les Facultés dentaires se développent rapidement, le nombre des Ecoles diminue, elles seront prochainement toutes fermées. Deux Instituts de Stomatologie indépendants et 12 Facultés de Stomatologie attachées à des Instituts médicaux admettent 1.500 étudiants tous les ans. Les quatre Ecoles dentaires qui existent encore acceptent 240 étudiants. Les études dentaires dans les Instituts et Facultés de Stomatologie durent 5 ans.

Environ 75 % des praticiens dentaires sont des femmes. Il existe des Societiés scientifiques de Stomatologie dans toutes les républiques et provinces. Elles se sont groupées en une Fédération Nationale. Les Stomatologistes ont les mêmes droits et reçoivent les mêmes salaires que les autres Médecins, soit entre 800 et 1.100 roubles par mois. (*Medical Digest.—Dental Health*, mars 1957).

Aux U.S.A.

La fluoruration de l'eau de la ville de New York ne se fera pas cette année. Telle fut la décision prise le 6 mars dernier par le New-York City's Board of Estimate, après une délibération publique ayant duré 14 heures. Plus de 600 personnes étaient présentes, 88 témoignages, pour ou contre, furent apportés. Des personnalités très importantes du monde médical avaient pris la parole en faveur de la fluoruration, qui était approuvée par le Maire Wagner, par le Département

de la Santé de la Ville, par la "American Public Health Association" et appuyée par un appel du "Comité pour la Protection de la Santé des dents des Enfants" portant 225 signatures. Le chef des opposants était J.-F. Forman, de Columbus (Ohio), Président du "Medical-Dental Committee on Evaluation of Fluoridation". (*J.A.D.A.*)

La fluoruration vient d'etre adoptee dans le Massachusetts, par les localités de Andover (14,355 habitants) et Wilmington (9,408). Le nombre de communes "fluorées" est actuellement de 1,492, dont la capitale des U.S.A., totalisant une population de 31,485,409 âmes, parmi lesquelles figure le Président Eisenhower . . lui-même, qui s'en est déclaré fort satisfait. (*J.A.D.A.*)

La Cour supreme de Justice a toujours approuvé la fluoruration. Dans toutes les instances, en nombre considérable, qui ont été introduites invoquant contre la technique des raisons, aussi bien religieuses que politiques ou scientifiques, les juges ont décidé que celle-ci "ne lèse en rien les droits constitutionnels des citoyens, n'est pas arbitraire, n'est pas illogique, ne constitue pas une médication, ni un changement, ni une législation pour une seule classe de la population et n'est pas une violation de la liberté religieuse". (*Amer. Jour. of Public Health.—L'Information Dentaire, 23, 24*)

Volume 23
Number 9
Toronto
September, 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

Dental Education and the Dental Manpower Shortage*

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One of the many benefits which accrue when one begins the preparation of a manuscript for an occasion such as this is the satisfaction of finding factual evidence of that which has been taken for granted for so many years. All too frequently we are prone to accept the current status without taking time to learn the facts concerning that which lies behind the present state of affairs.

For almost thirty years I have had an awareness of the excellence of dentistry and dental education in Canada. One could not have watched the efforts of Wallace Seccombe without becoming extremely aware of the soundness of our profession in your great country. Dr. Seccombe is mentioned because it was in the twenties that I met him as the first representative of Canadian dentistry. Later, the address he made as the President of the American Association of Dental Schools, when the organization met in Toronto in 1930, clearly demonstrated the attitude of the dentists in Canada toward the then suggested dismemberment of the profession. Of course Dr. Seccombe was but one of many in your country who has made great con-

* An address delivered to the Convention of the C.D.A.-W.C.D.S.—Winnipeg, Manitoba, June 1957.

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tributions to dental education. This is evidenced by the fact that when the American Association of Dental Schools was founded in 1923, Dr. A. W. Thornton of McGill University was chosen as the Vice-President of the organization and in two years was to serve as its President. He, in turn, was followed by Dr. Seccombe, who served in 1930, then Dr. Arthur L. Walsh, of McGill University, who served in 1942, and now the organization is blessed by having Dr. Roy G. Ellis, of the University of Toronto, as its current President. All of these men, together with the many others from the Faculties of the Canadian schools who have served and are now serving on the various committees of the Association, have made great contributions to the cause of dentistry and dental education.

Regardless of how hard one might try it would be difficult to describe the present situation more clearly than the past was described by Dr. Willian J. Gies, when he wrote as he did in the now famous Bulletin Number Nineteen which was published by the Carnegie Foundation for the Advancement of Teaching in 1926. He wrote as follows: "The main features of dental education in Canada and in the United States are so similar that such differences as may be noted are not greater, in general, than those existing between the best dental schools in any pair of American states. Intercourse between the two countries having been free for more than a century, the interchange of professional and personal courtesies having been uninterruptedly cordial and sincere, and the benefits of this inter-relationship having been mutually helpful and sustaining, it has required persistent effort, throughout the present study and in the preparation of this Bulletin, to restrain the spontaneous tendency to think and write of the dental schools in Canada and in the United States as units of a single system."

The record of advancement in the thirty-one years which have passed since the above was written has proven the wisdom and breadth of understanding displayed by Dr. Gies, because certainly if there ever was an example of two countries working hand in hand in an attempt to find a common solution to a common problem, the dental profession in our two countries can serve as that example.

In many ways you have done a better job than we in the States have done. The dental schools of Canada were free of proprietary ownership long before the schools in the States had removed the profit motive from dental education. Although your first school was founded thirty-five years after our first school began, you did not have to wrestle with the problem of second rate schools which were being operated, sometimes by persons having no connection with the profession, solely for the purpose of making money on their investment. Fortunately, we have now reached the point where we have all of our schools, except one, being operated as integral parts of either state or private universities and in the instance of the one exception, the school has, for some time, been operated on a non-profit basis.

The co-operation between our two countries has recently been further advanced by an action, which in the opinion of all, has done more to cement our profession than any previous official action. I refer, of course, to the results of the splendid co-operation between our two Councils on Dental Education. Now, as you all know, the accreditation of a school in one country automatically accredits the school in the other country. This is as it should be and the recognition of this fact removes the last barrier to interchange between the dental educational institutions of both countries. The Survey Committee of your Council on Dental Education has done a monumental job and the Canadian Dental Association, I am sure, is grateful for the diligence and the sacrifice which was given to the task of inspection of the dental educational facilities in your country. Having served for five years on the Council on Dental Education in my own country, I have some knowledge of the task which faced these

men and having read their reports I have some appreciation of the thoroughness with which they discharged their obligations.

Since the members of the profession in both countries have worked in such harmonious fashion down through the years and since the social and economic lives of the citizens of both countries are so intimately intertwined, it is reasonable to assume that the vexing problems of dentistry are likewise to be shared by the profession in each country. Although we are beset by many problems, each of them, when being considered as an entity, ultimately become but one facet of the overall problem – how are we to render the greatest service to the greatest number of people. This problem, in the ultimate, becomes a question of manpower, both professional and auxiliary, and the proper utilization of this manpower.

In my country we are currently wrestling with the problem of what we are to do now in order to meet what we see lies ahead in the almost immediate future, and if we are to judge by facts and statistics the same problem faces you within the same period of time.

Within the past year the Bureau of Economic Research and Statistics of the American Dental Association published a report indicating what we might expect by the year 1975. This report was based upon the projected census figures for the years between 1956 and 1975. According to the Bureau, we had in 1956, one active dentist to every 1,886 persons. This figure differs from the overall ratio of one dentist to every 1,667 persons because the Bureau attempted to take into consideration those dentists who were inactive because of other fields and other such factors. The Bureau went on to point out that in the year 1956 we graduated 3,019 students from the 43 dental schools then in operation. Utilizing the more or less commonly accepted mortality statistics, this number is but approximately 700 more dentists than were lost to the profession within that year, but these 700 additional dentists, based on the ratio of one dentist to every 1,886 persons, barely equals the increase in the population which came during the same period.

The population projections which were made by the United States Bureau of the Census were for the years 1956 to 1975. This Bureau made these projections at four different levels, each based upon a different prospective birth rate. To simplify this discussion but two of the projections will be used, the lowest and the highest. The lowest is more or less based upon the birth rate we experienced during the 1930's or as these years are commonly called the "depression years", the highest projection is based upon the birth rate we experienced in the 1940's which, as we all know, were the years in which the birth rate was greatly influenced by the war. The projections show that if the birth rate of the 30's is the pattern we will then have, by 1975, approximately 207 million people in the United States while if the birth rate of the 40's is the pattern we will, by the same year, have approximately 228 million people in our country. The current figures show that in the first five months covered by the predictions we ran slightly below the maximum prediction and considerably above the minimum prediction. This follows the usual pattern we have had in the past when predictions were made on population expansion.

It immediately becomes evident that if we are to meet these expanding needs we must at once begin the expansion of our facilities for dental education. Studies have been made indicating that if the lowest population prediction becomes a fact, we must, by 1975, be graduating 3,797 persons each year if we are to maintain the present dentist-population ratio; but if the highest population prediction becomes the fact, we must by 1975, be graduating at least 5,239 persons each year to maintain that ratio. This latter figure more nearly approaches what is expected to be the case in light of the population increase rate we have experienced since these studies were made and

if this be true it means an increase in graduates of approximately 73% over the number graduated in 1956.

How this can be done appears to be a problem almost without solution. In the Fall of 1956 two new dental schools began operation. These two schools provided but 84 additional Freshmen beyond the enrollment of the previous year. As of October 1956, there were 3,561 Freshmen enrolled in all of the dental schools in the United States and in the study made by the Bureau of Economics and Statistics it is estimated that in 1960 there will be 3,360 persons graduated and it is also estimated that by that time the dentist-population ratio will have been raised from the 1 to 1,886 level to a level of 1 to 1,925.

In the Fall of 1957 two additional dental schools will begin their operation. One will be in West Virginia University and the other in the University of Puerto Rico. Neither of these schools will be in the higher brackets of enrollment, hence, their total impact will not be large. In fact the Bureau has summarized their study by stating that in each year between the years of 1957 and 1971 two new schools, admitting fifty Freshmen each year, must begin operation if we are to meet the expected need.

It is, of course, unnecessary for me to delineate the situation which exists in your country since you are so much more familiar with it than am I, however, it was extremely interesting to peruse the Report on the Statistical Data Concerning Dental Personnel in Canada, which was issued by your Association in January of this year. This report shows that you had a total of 5,481 dentists with an overall dentist-population ratio of 1 to 2,934. In your instance, as in ours, you have a wide variance between the ratios in the various Provinces, ranging from 1 to 10,643 in Newfoundland to 1 to 2,353 in Ontario. Each of us has factors which account for this varying distribution. Some of these factors are identical yet others are vastly different but these factors must be taken into consideration whenever and wherever the distribution of dentists is discussed. No hard and fast rule has ever been established for the distribution of professional manpower and as long as the free enterprise system remains in effect no rules can be applied.

You, like we, are having a great increase in your population and you, like we, are going to be expected to do something about it. I was pleased, as I know you were, to learn that the University of Manitoba will soon begin to offer an opportunity, to qualified persons, to receive an education in our profession. This will provide a much needed addition to the opportunities for dental education in your country.

It would appear, however, that further opportunities should be afforded. In this school year the dental schools of your country have enrolled a total of 785 students, 206 of whom are Freshmen. From the same report it appears that you are to graduate approximately 185 persons this year. This figure is somewhat above the average for the past five years, excluding the years which immediately followed the cessation of World War II. Plans now laid will provide some of this needed increase, that is when the new buildings at Dalhousie and Toronto are completed and are in operation.

In reviewing the statistics of enrollment in both countries it was interesting to note that the students enrolled in your schools from our country practically offset the students from our country who are enrolled in your schools, that is, there were 42 from the United States enrolled in Canadian schools and there were 39 from Canada enrolled in the schools in the States. In addition you had 15 students enrolled from other countries than your own.

The study of the source of your students was an interesting one. It shows that 66.49% of your students come from but two of your Provinces, but a closer study of the ratio of students to population indicates that the pattern is not as

erratic as one would conclude if the percentage figures were considered alone. For example, Prince Edward Island provides but 1.02% of the total number of dental students yet there is one dental student to every 12, 411 of the population of that Province; on the other hand Manitoba provides 3.31% of the total student body but there is only one dental student to every 32,694 people. In the overall you have one dental student to every 20,485 persons while in the United States we have one student to approximately every 12,900 persons.

It was not learned how many persons apply for admission to your schools but since you have 57 non-resident students out of a total of 785, a percentage of 7.26, it would indicate one of two things; one, you do not have a sufficient number of qualified students interested in studying dentistry, or; two, you are being overly generous in educating persons for other lands. By comparison we have but 141 students out of a total of 13,004 who come from outside the United States. This is a percentage of 1.08. In our case we are accused of not being generous enough in providing opportunities to foreign students.

This raises the question of the recruitment of dental students. On all sides we hear how difficult it is to get into a dental school. The figures as to the total number of applications filed is quite an impressive figure. Actually, when you consider the number of applicants who file these applications, the figures become much less impressive. The findings of the Council on Dental Education show that we have 2.7 applicants for each place in our Freshman classes. Even this is not a true figure because, from the experience we have had in our school, not nearly all who file applications are academically qualified and that number is further reduced by those who fail to demonstrate proficiency in the aptitude tests. It is my firm belief that the qualified student has no difficulty in gaining admission and the exceptional student can pick and choose with a little competition on the part of the schools thrown in for good measure, As an example, we had one student last year who made application to nineteen schools. His academic record and the results of his aptitude tests were such that practically any school would have been glad to have him as a student.

This presents a problem which we, as a profession, must help to solve, in fact, we must lead the way in arriving at a solution. We must begin to create, at the secondary school level, a desire to enter the profession of dentistry. This must be done on a high plane instead of trying to "sell" the profession on the basis of glamour, as has been attempted in certain instances. We must begin to educate the school counsels, the university counselors and others whose interests are directed toward the guidance of our youth. If we will do this, we will begin to have more applications from qualified persons with a true motivation to study dentistry rather than have the number of "frustrated physicians" who are currently applying. There is great competition for brains. We must enter that competition rather than to sit back with smug satisfaction that we have a great profession and that we are doing the applicant a great favor to permit him to enter the portals. This in a large part is the solution of our manpower problem.

There is another facet to the problem of rendering service to the public, which is causing great concern in our profession. It is the position to be occupied by what is called the auxiliary personnel and the service to be rendered by them. For years we have had some members of our profession who have advocated that lesser trained persons should be permitted to perform some of the services now limited to the higher trained personnel, and may I say in passing, that I am thankful that such persons have been in the great minority.

We are permitted to serve as dentists because the law states that we may do so after having met the requirements pre-

scribed by such laws. Presumably, and I believe it to be so, these laws were written and passed not to endow any group of people with a right but rather to protect the people who are the recipients of the service rendered in the interest of preserving the public health and welfare. If at this date, we have reached the point that some of these services can be relegated to the lesser trained then we have wasted a great deal of time and money for a great many people. I do not believe this to be true. On the contrary, I believe that in the last quarter of a century alone we have learned more forcibly than ever before that dentistry is not solely a matter of mechanical execution of certain procedures but instead present practice includes and demands more than ever before a thorough knowledge of the fundamental sciences and an integration of these sciences with the mechanical execution of the operation.

Repeatedly we have had efforts made to change our lives to permit the dental technicians to perform those services which we classify as Prosthetic Dentistry. Within this year, we have had such an attempt defeated in the State of Washington and as this manuscript was being prepared such a law was pending in the legislature of the State of Illinois. In every previous instance such laws have been defeated because we have been able to demonstrate that dealing with the health and well-being of an individual is not a sheer matter of the mechanical procedures involved, but instead is a matter of having full knowledge of the basic physiological processes. It was gratifying to learn that you in Manitoba together with the rest of the profession in your country have been able to defeat such legislation in your Province.

In passing, I would like to make an observation. These measures have been defeated, in almost every instance, because of the intensive efforts of a few members of the profession. One of the main reasons we have such difficulties with a small segment of the dental laboratory group is the apathy of the dental profession. This apathy is most frequently demonstrated by a lack of observance of what is right and wrong in their dealings with technicians. The same apathy extends into the assistance given in helping to defeat a measure when it is up for consideration before law making bodies. This is not a problem for the elected officers alone, but rather it is a matter of vital concern to every one who is a member of the profession. This apathy is in a great measure due to a complacent attitude which is usually present when times are good. Practitioners are busy, appointment books are filled and collections are good. In times like these it is difficult for many to direct their attention toward those matters which might adversely affect the profession. It is again a case of – it can't happen here.

Fortunately there are some who have recognized the import of the problem. No one can prophesy what the future may hold but efforts can be made to analyze the situation and then to act on the basis of the decisions reached. Such a project has now been launched. By an action of the House of Delegates of the American Dental Association, there is now underway a survey of dentistry in the United States. The project will extend over a period of two years and will cost $400,000.00, the money is provided by grants from the Kellog Foundation, the Rockefeller Brothers Fund, The Louis W. and Maud Hill Family Foundation and the American Dental Association. The objective of the survey is to assess the achievements, resources and potentialities of dentistry in the United States; to determine desirable areas of future development and to recommend methods for the better provision of service. The survey is under the direction of the American Council on Education and is being conducted by the organization at the request of the American Dental Association. The survey will centre on four areas; dental education, dental research, dental

practice and dental health. It will be conducted and administered by a national commission composed of representatives from such groups as education, labor, management, medicine and dentistry.

When this survey is completed it should and very probably will provide some answers to the very vexing problems we face. The results could well provide a pattern for action which could materially alter the programme we now pursue. If such be the case, the profession must take the lead in bringing about these alterations and I am certain that with the profession working together we can continue to demonstrate, as we have in the past, that the dental health of the people of our countries is in safe, capable hands.

Nutritional Influences Upon Oral Diseases*

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The foodstuffs that we consume meal by meal and day by day comprise the most important component of our physical environment on a continuing lifetime basis. While systemic disorders of infectious, endocrine, emotional, or degenerative nature frequently overwhelm a good dietary relationship for varying periods, over the years we are physically unable to rise higher than the base line that our day to day food intake permits.

Although 2 or 3 decades ago, there were few examples of how our diet and its nutritional constituents affected oral health, recent years have provided numerous specific evidences of both short and long term influences of food intake on oral health as well as on general health. Even a decade ago true nutritional influences upon tooth decay had to be discussed with caution and restraint. On the basis of preliminary findings in various facets of this problem, it seems reasonable to assume that additional specific nutritional relationships between tooth development and dental caries susceptibility will be established. Possibly even more important still may be the development of specific dietary procedures for the prevention of tooth decay that will be based on improved abilities to select foods, and to conserve their anticariogenic nutrients and on the appropriate fortification of foods with necessary nutrients. Although many areas in our knowledge of the relation of nutrition to the development and maintenance of the teeth are becoming clearly evident, little is yet known about potential relationships of nutrients to the various areas of periodontal disease.

* Presented at the Annual Convention of the Canadian Society of Dentistry for Children, Toronto, Ontario, May 11, 1957.

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Relations of Nutrition to Tooth Development

In any discussion of the relations of nutrition to tooth development and to dental caries among human populations, genetically determined constitutional variations in tooth form and structure and in proneness to dental caries become involved. The influences of nutrition and genetics are further complicated by reason of the various economic, social and religious precepts that determine food choices by different races of people. Hence, even from the most intensive epidemiologic studies where dental caries data have been compared for people of one racial background with those of another, few, if any, valid comparisons can be drawn. Therefore, many studies to define the relative influence of nutrition and genetics have had to be conducted in experimental animals where genetic and nutritional influences can be rather carefully segregated by reason of the controls that can be imposed in laboratory trials.

From human studies, it has been widely concluded that such anatomical characteristics as tooth size, cusp form and angulation were exclusively determined by inherited constitutional influences. This concept is now subject to revision by reason of the results of investigations by Paynter and Grainger who imposed certion nutritional stresses upon female rats either before or during pregnancy and lactation.[1] When their babies were 20 days of age, they were sacrificed and careful studies were made of the size and form of the first maxillary molar. Such nutritional variations as a vitamin A-low diet, a high-phosphate diet or a fluoride-supplemented diet caused significant reductions in the size of the first maxillary molar. In addition, the major sulcus of these molars was strikingly changed in so far as its shape and depth were concerned. Especially in the rats fed the high-phosphate diet for a relatively long period prior to pregnancy and during pregnancy and lactation, this sulcus was much shallower and the angulation of its sides was greater. It is to be hoped that further studies will indicate whether or not caries-susceptibility was altered by these developmental dietary manipulations and the degree to which alterations in caries-susceptibilty could be correlated with the measured differences in tooth size and form.

Unquestionably the best demonstrated relationship between dietary components and tooth development concerns the fluoride ion. The dental benefits to be derived from the ingestion of fluorides naturally borne in water supplies or provided at optimal levels through fluoridation are sufficiently well-known that they do not need to be elaborated here. However, certain aspects of fluoride incorporation into the enamel of developing teeth need to be reviewed. The various areas of the enamel contain appreciably different concentrations of fluoride[2]. Examples of the distribution of fluoride at various levels of the enamel of erupted deciduous and permanent teeth from a low-fluoride area and also for mottled permanent teeth from a high-fluoride area are presented in Table 1. Layer #1 was collected from the surface of the enamel, whereas the layers with higher numbers were from progressively deeper areas of the enamel. In all cases, the fluoride concentration in the outer layers was several times higher than the concentration in the inner layers. From these data, it is impossible to determine whether or not the fluoride was incorporated during tooth development or thereafter. Hence studies have been made on teeth that were unerupted[2]. The data for partially formed crowns and for fully formed but unerupted crowns are shown in Table 2. The surface layers of enamel in partially formed crowns in a low-fluoride area (Buffalo) and in fully formed crowns in a low-fluoride area and in a fluoridated area (Rochester) contained much higher concentrations of fluoride than did the inner layers of enamel. This distribution in fluoride concentration must have occurred as a result of systemic influences. It is interesting to speculate

TABLE 1
Fluoride Concentration in Successive Layers of Enamel from Deciduous and Young Permanent Teeth from a Low-Fluoride Area and from Mottled Permanent Teeth.*

Enamel Layer	Enamel from Deciduous Teeth from Low Fluoride Area	Enamel from Permanent Teeth from Low Fluoride Area	Enamel from Mottled Permanent Teeth
No.	ppm.	ppm.	ppm.
1	448	571	1,859
2	126	269	754
3	43	112	470
4	56	90	372
5		48	328
6			261
7			233
8			228
9			228

* Modified from F. Brudevold, D. E. Gardner and F. A. Smith: J. Dent. Res., 35: 420, 1956.

how the inorganic crystals of the outer layers of the enamel could have been influenced during their formation to cause approximately a 10 fold higher concentration in fluoride than the inorganic crystals in the inner enamel that were laid down a few weeks or months earlier.

Nutritional relationships to tooth development are not limited to the fluoride ion. One of the earliest demonstrations of this was made by Sognnaes when he showed that rodents maintained during the reproductive cycle on stock diets composed of natural foodstuffs bore young that had

TABLE 2
Fluoride Concentration in Successive Layers of Enamel from Crowns of Unerupted Permanent Teeth.*

Enamel Layer	Enamel from Partially Formed Crowns from Buffalo, N.Y.†	Enamel from Fully Formed Crowns from Buffalo, N.Y.†	Enamel from Fully Formed Crowns from Rochester, N.Y.††
No.	ppm.	ppm.	ppm.
1	331	528	847
2	101	232	391
3	57	150	201
4	33	96	172
5			88
6			64
7			40
8			26
9			32

* Modified from F. Brudevold, D. E. Gardner and F. A. Smith: J. Dent. Res., 35: 420, 1956.
† Low fluoride area.
†† After beginning of water fluoridation.

a much higher resistance to tooth decay than did the offspring of females that had been maintained throughout pregnancy and lactation on relatively purified diets[3]. In the search to determine the extent to which the minerals motivated this developmentally-produced higher caries resistance amongst the animals fed the natural diet, an ash mixture was prepared from the natural diet under relatively careful circumstances. When this ash mixture was fed throughout the reproductive cycle in place of the reagent grade salt mixture in the purified diet, the offspring had a caries-resistance that was almost as high as the caries-resistance produced in the offspring of animals fed natural diets[4]. These observations have been duplicated under somewhat different circumstances by other investigators.

A relationship of the calcium-phosphorus ratio of the diet during tooth development to the ultimate caries proneness has also been reported[5]. Cotton rats fed a diet with a high-calcium-phosphorus ratio during the later stages of tooth development were noted to have a much higher carbonate content in the inorganic portion of the enamel and dentine than did animals that were fed a low calcium-phosphate ratio. The data on the initiation and progression of carious lesions in these animals are presented in Table 3. This increased carbonate content in the high calcium-phosphorus group was associated with a relatively high susceptibility to tooth decay, whereas the low carbonate content of the animals fed the diet with the low calcium-phosphate ratio was associated with a relative resistance to tooth decay.

Nutrition during Tooth Maintenance

Possibly the most significant study on the relation of dietary components to oral environment and to dental caries initiation is the Vipeholm caries study conducted by Gustafsson and coworkers[6]. These investigators attempted to determine whether there was any difference in the degree of cariogenicity of carbohydrates that was dependent upon their physical form and the time and circumstances at which they were eaten. From these studies, it can be concluded that carbohydrates *per se* are not to be condemned but that the cariogenic ability of any particular food or carbohydrate is dependent upon the rate at which the material adheres to the surfaces of the teeth and the rate of clearance from the oral cavity. Under circumstances where oral clearance is low, the tendency to an increased caries initiation and progression is high. This experiment conclusively demonstrates what has been believed to be the case as a result of many other less conclusive experiments as well as individual observations by dentists in widely different areas of the world.

Since we know that components of our diet do contribute to the oral environment, the question then arises "Are there nutritional influences, in addition to the strictly dietary (oral environmental) ones, that have an influence upon fully formed teeth?" Klein reported that children who were moved during the years of World War II from low fluoride areas to high fluoride areas after their teeth were fully developed, had a slightly reduced incidence of tooth decay[7]. Since the size of the groups involved here was small, little credence was given at that time to any possible post-developmental influence of water-borne fluorides. Another study under different circumstances provided similar results[8]. Then, in recent months two different demonstrations have given strong support to the possibility that fluorides can be incorporated to some degree into the erupted tooth, and that fluoride ingestion gives a degree of protection to erupted teeth[2,9]. Studies on the fluoride concentrations in enamel indicated that the amount of fluoride in the surface layers approximately doubled with increasing age (Table 4). In the Grand Rapids area after fluoridation had been underway for 11 years, carefully evaluated data indicated that the teeth

TABLE 3

Effects of Developmental Diet on Caries-Susceptibility in the Cotton Rat

Diet	Number of cotton rats	Average number of carious lesions	Average extent of carious lesions
High Ca—Low PO_4	55	11.2	26.0+
Low Ca—High PO_4	41	4.6	10.5+

already formed at the time fluoridation began developed approximately 17 per cent less carious surfaces than comparable teeth of the children in Muskegan, the control low-fluoride city.

Numerous experiments with rodents after the teeth are fully formed, also support the view that nutritionally motivated influences alter the initiation and progression of tooth decay. One of the first of these was a study conducted at Emory University Dental School, where a diet that had been used by the Emory workers for a number of years was compared for its cariogenic properties with the usual Harvard cariogenic diet[10]. The Emory workers had been led to initiate this investigation because they had continually observed levels of caries initiation in their experiments that were about half as extensive as the caries initiation reported from the Harvard laboratories. Hence the Emory diet was prepared in the usual fashion in their laboratories, while the Harvard diet was prepared in Boston and shipped to Atlanta. The results constantly indicate that the Harvard diet in a direct comparison with the Emory diet uniformly resulted in at least twice as much tooth decay in cotton rats and in albino rats as did the Emory diet. Since the carbohydrate, fat and protein contents of these two rations were practically identical, there is little likelihood that oral environmental influences could have been invoked to cause this difference. Studies are now underway to evaluate the influence on the dental caries incidence of the mineral and vitamin components of the two diets. There is a suggestion under some circumstances that the different composition of the two salt mixtures may be partially responsible for the difference in caries-producing ability of the two rations.

A similar study has been conducted by McClure and Folk where they noted a wide difference in the ability of skim milk powders produced by different processes to produce dental caries[11]. The caries score for rats fed a diet composed largely of a spray process skim milk powder was very low. Skim milk powders made by the roller process where more heat is involved caused a significant increase in caries scores. When any one of these skim milk powders was heated rather mildly in the laboratories of these investigators, a striking increase in caries initiation was produced in every case.

Further support is given to these two animal experimentations by several other series of experiments. Postdevelopmental lysine deficiency apparently increased the incidence of carious lesions on the smooth surfaces under certain experimental conditions[12]. Variations in the calcium and phosphorus levels and ratios in the postdevelopmental ration of rats also caused major changes in the initiation and progression of carious lesions[13, 14].

Actually the concept that nutritional influences can be mediated in the fully formed tooth should not be surprising at this stage in dental research. A number of radioisotope studies have indicated that enamel and dentine both are permeable to various ions and that the inorganic crystals in these calcified structures have a restricted ability to participate in the exchange of component ions of the lattice with ions in the body fluids. When

TABLE 4

Fluoride Concentration in Successive Layers of Enamel from Erupted Permanent Teeth from Individuals of Varied Age.*

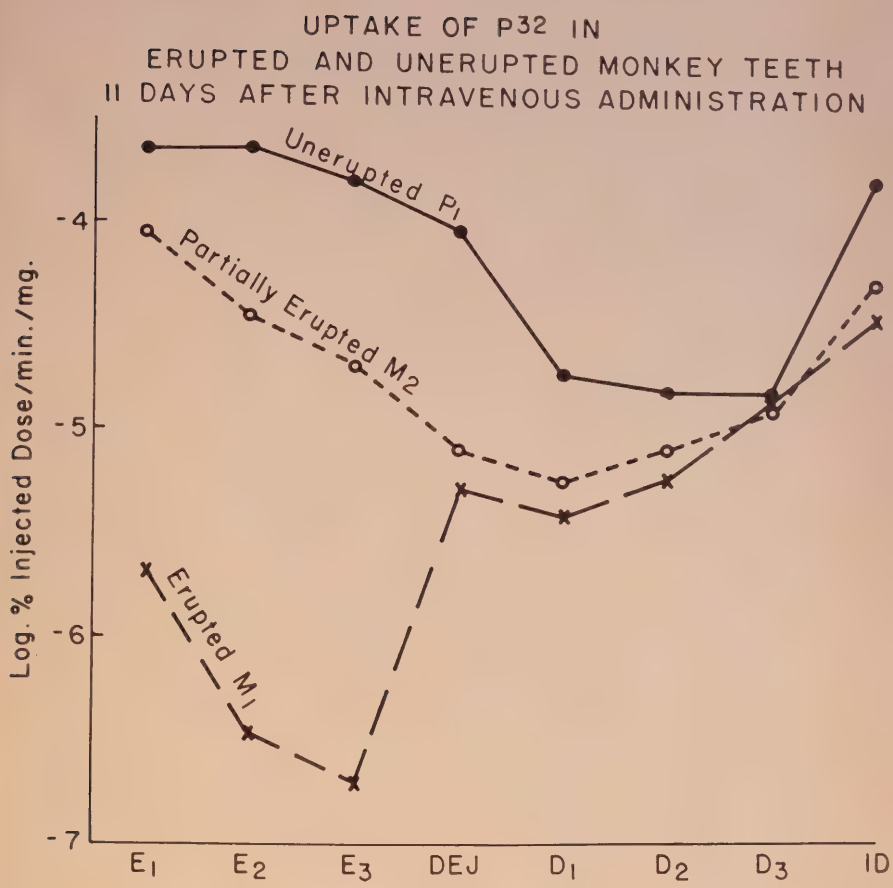
Enamel Layer	Age of Individual Subject			
	Under 20 yr.	20–29 yr.	30–39 yr.	Over 50 yr.
No.	ppm.	ppm.	ppm.	ppm.
1	571	1,205	1,070	1,247
2	269	531	553	667
3	112	324	368	404
4	90	233	249	315
5	48	180		176
6		77		147
7		67		97
8		77		58
9		105		

* Modified from F. Brudevold, D. E. Gardner and F. A. Smith: J. Dent. Res., 35: 420, 1956.

a tracer dose of radiophosphorus is injected intravenously into a monkey, all areas of the teeth within a few hours contain detectable amounts of the tracer[15]. The distribution of the isotope is characterized by two definite gradients: one decreasing from a high level in the external enamel to an extremely low concentration in the internal enamel and the other increasing from a low level in the external dentine to a very high content in the internal dentine.

Fully erupted teeth, partially erupted teeth and fully formed but unerupted teeth have widely different abilities to exchange phosphorus ions (Figure 1)[16]. The rates of incorporation into the dentine are not strikingly different for a fully erupted and an unerupted tooth. The rate of incorporation into unerupted enamel is roughly 100 times as rapid as the rate of turnover in the enamel of an erupted molar. However, the most interesting comparison comes in the consideration of the partially erupted tooth, where the turnover in the dentine again is comparable to that in an erupted tooth, but the turnover in the enamel of the unerupted tooth is approximately 100 times that in the erupted tooth and relatively comparable to the turnover in the enamel of an unerupted tooth. These observations suggest the possibility that the early post-eruptive period of every tooth can be considered as a maturation interval, during which active metabolic processes are proceeding at an appreciably more rapid rate than in the older tooth.

The permeability of teeth to ions and to body fluids is no doubt largely due to the fact that the inorganic and organic components are very minutely intermingled to permit a passage from the saliva bathing the surface enamel through to the blood supply of the pulp and vice versa. The degree to which the inorganic and organic moieties are interlaced has been clearly demonstrated at electron-microscope levels of magnification[17]. Probably many of the secrets of what constitute a caries-resistant or a caries-susceptible tooth lie in the nature and composition of the hydroxyapatite crystals that compose the inorganic portion of the enamel and dentine. The degree to which the composition of the hydroxyapatite crystal may vary as a result of the systemic influences during its formation, and the possible ways in which the crystal may be influenced thereafter by exchange



and recrystallization are just beginning to be recognized.

Diet and Periodontal Disease

If the relationships between diet, nutrition and tooth decay appear complicated, the relationships of diet and nutrition to periodontal disease manifestations can be said to be confused in a morass of conjecture. While vitamin C deficiency and the deficiency of various members of the vitamin B complex have readily definable oral syndromes, there appears to be no definite demonstration that any one or any group of these deficiencies consistently underlies the development of periodontal disease manifestations nor that dietary supplementation with any one or any group of nutrients is likely to cause the repair of established lesions.

The most thorough study of the available literature from human surveys leads the unbiased reader to the conviction that detailed definitive experiments are need-

TABLE 5
The Influence of Penicillin and Streptomycin on the Incidence of Periodontal Lesions in the Rice Rat.

Group	Ration	No. of Rats	Soft Tissues		Calcified Tissues	
			No. of Lesions	Extent of Lesions	No. of Lesions	Extent of Lesions
1	700	26	14.5	32.5+	23.3	45.5+
2	770	18	2.7	3.1+	18.9	21.8+
3	4	19	19.1	39.9+	24.6	47.3+
4	Laboratory Chow	8	17.3	26.1+	24.6	44.8+
5	Ground Laboratory Chow	12	4.5	5.5+	20.4	26.1+

ed under the refined conditions possible with experimental animals, before any real sorting out of the factors involved in the aetiology of human periodontal disease will be possible. A variety of types of abnormalities in the periodontal tissues have been reported in more or less sporadic fashion for a wide variety of animals from the monkey through the canine to the rodent. Ordinarily the percentage incidence in these animal populations has been too small to permit ready use in the laboratory. A few years ago certain strains of hamster were found to be readily and consistently susceptible to one form of periodontal disease[18]. More recently the rice rat has been shown to be unusually susceptible to a periodontal disease syndrome[19, 20]. In both species, strong predisposing factors existed that were related either to the genetically determined constitution or to the dietary background during prenatal and early postnatal life. Probably the first steps in the development of a satisfactory programme with well-controlled experiments must be an evaluation of the most desirable dietary procedure for stock colony maintenance and also a phenotypic selection of the breeding stock for future generations to narrow down the wide variation in proneness to the periodontal disease syndrome.

Even though our present experimental subjects do not have the degree of uniformity with respect to susceptibility to

TABLE 6
Studies on the Relation of Dietary Variations on the Incidence of Periodontal Lesions in the Rice Rat

Group	Ration	No. of Rats	Soft Tissues		Calcified Tissues	
			No. of Lesions	Extent of Lesions	No. of Lesions	Extent of Lesions
1	700	10	17.2	55.2+	26.7	66.7+
2	700 + 0.05% Penicillin	9	0.7	0.7+	22.9	30.7+
3	700 + 0.01% Penicillin	10	3.2	3.5+	21.2	30.7+
4	700 + 0.05% Streptomycin	8	0.6	0.6+	17.9	22.6+
5	700 + 0.01% Streptomycin	10	9.2	25.7+	23.4	47.6+

periodontal disease that the commonly used strains of white rats have with respect to tooth decay, some preliminary experiments to segregate aetiologic factors have been possible. Both penicillin and streptomycin at levels of 0.05 per cent in the diet were highly effective in reducing the incidence of periodontal disease as expressed in terms of damage to the soft tissues (Table 5). Both were also somewhat effective as far as reducing the amount of damage to the calcified tissues. The 0.01 per cent penicillin supplement was also highly effective in reducing soft tissue lesions but a comparable level of streptomycin was almost completely ineffective.

In another experiment the effect of various relatively standardized dietary regimens was tested on the initiation and production of periodontal lesions in the rice rat (Table 6). The rations were: Ration #700 which is the Harvard high sucrose cariogenic diet; Ration #770 which is a non-cariogenic sucrose-free diet, based on Ration #700 where all the sucrose has been replaced isocalorically by casein and lard; Ration #4, which is the standard ration used by Keyes in the production of periodontal lesions in the hamster; Purina Laboratory Chow; and ground Purina Laboratory Chow. The animals maintained on Rations #700, #4 and Laboratory Chow developed about equal amounts of periodontal disease. However, a statistically highly significant reduction in the amount and extent of periodontal lesions in the rice rats maintained on noncariogenic ration #770 and on ground laboratory chow was observed. The influence upon soft tissues was much more striking than upon the calcified tissues. Since this difference occurred both as a result of the beneficial effects of the antibiotics and of ration #770 and ground laboratory chow, it seems as though control of the soft tissue problem in this species will be much easier than control of the problems of the hard tissues. Up until the present time we have found no means to control the rate at which lesions develop in the calcified tissues, even though by the above procedures, practically all superficial surface effects in the soft tissues can be completely prevented.

Summary

While many details about the relationship of nutrition to the development, maturation and maintenance of the teeth and their supporting structures are not completely understood, numerous well-demonstrated observations indicate the value of the nutritional quality of our daily diet in obtaining and maintaining optimal oral health. These observations all indicate that the optimal diet for good oral health is simultaneously an optimal diet for buoyant general health.

The best dietary advice for any age group can be given in the following 6 items:

1. In each day's diet, there should be a liberal supply of each of the seven basic food categories (milk and milk products; fruits, tomatoes and raw cabbage; enriched, restored or whole grain bread, flour and cereals; potatoes and sweet potatoes; leafy, green and yellow vegetables; meat, poultry, fish, eggs, legumes and nuts; food fats — butter, fortified margarine, etc.). A reasonably equitable distribution of these types of foodstuffs should be provided at each of the three meals.

2. The selection of foodstuffs should be varied and consist of as many foods as possible in their natural state without excessive refining. Cooking procedures should be used that are mild with specific planning to conserve as much of the original nutritive value as possible.

3. A liberal source of vitamin D should be provided daily throughout the entire growth and development period. A vitamin D concentrate or vitamin D-fortified milk may be used with equal results.

4. A minimum of sticky, high carbohydrate foods, with a low clearance from the oral cavity should be used. As snacks in place of the above materials, fresh fruits and vegetables, fruit juices or milk are to be commended.

5. Specific efforts should be made to include in each day's diet some foods that require vigorous chewing.

6. In the overall programme, probably the most important developmental factor can be provided on a community-wide scale through the fluoridation of public water supplies.

No one of the above 6 dietary suggestions has any unique claim in the prevention of oral disease. Simultaneous and continuous application of all 6, coupled with personal maintenance of good oral hygiene and with optimal, routine professional care can reduce the current incidence of the most common oral problems by spectacular amounts.

Unquestionably the real hope for major reductions in dental caries in future generations lies in the development of teeth with an increased resistance to tooth decay. In view of the prolonged dental developmental period, this long range objective cannot be accomplished overnight but requires ideal nutrition day by day during the entire life history of the individual. No better current example in the entire field of medicine exists to indicate that our food today determines our health and well-being, not only tomorrow but decades later in life. The desirability of this long range goal should not make us less eager to achieve the well-demonstrated benefits to be attained through optimal oral environmental conditions among those born too late to benefit from the newer knowledge of nutrition and tooth development.

Sucess in a nutritional programme of this scope to a large extent depends upon the ready availability of a varied selection of nutritionally desirable foods that are appetizingly prepared and offered both through the food industries and in the home. However, ultimately the success or failure of a nutritional programme depends upon the education of the individual child or adult patient to appreciate the importance of good nutrition, meal by meal and day by day not only for himself but also for the children of succeeding generations. Much to further this goal can and should be done through health education in our grade schools. However, no dentist should be guilty of failing to provide sound nutritional advice to every patient, both through the spoken word and through the ready availability of scientifically accurate and attractive booklets in his waiting room for patients to take home for further reference.

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Maxillary Odontome

A. A. ANTONI, D.D.S., M.Sc.D.*, and R. E. BOOKER, D.D.S.**, Toronto.

A Case Report

The patient, accompanied by her mother, was referred to the out-patient dental clinic of the Toronto General Hospital late one afternoon.

EXAMINATION

Chief Complaint: Pain and swelling in her left face.

History of present illness: The patient was completely comfortable until four days previously, at which time she noticed a localized discomfort in her left cheek.

Past Illness: Was hospitalized four years ago with acute Rheumatic Fever and treated for eight months. Has otherwise enjoyed good health.

Examination: The patient is a well-developed and well nourished white female, appearing to be of the stated age of sixteen and in obvious distress.

Extra-oral examination reveals a slight assymetry of the left cheek caused by swelling of the soft tissues inferior to the malar bone. The lymph nodes at the angles of the mandible on the same side are palpable and tender. Pulse is 80 regular and oral temperature is 99.6.

Intra-orally, the lips, vestibule, buccal mucosa, tongue, floor of the mouth, palates and oropharynx are normal. The teeth are well formed and show some evidence of previous dental care. The upper left molar region is apparently edentulous.

Posterior to the second bicuspid, the alveolar process is expanded buccally. A break in the continuity of the mucosa of the ridge exudes a purulent material when the tissues are compressed.

Because of the patient's anxiety and discomfort it was decided to postpone further examination until the next morning. A specimen of the exudate was taken for bacteriologic culture and report of dominant organism. Hot mouth rinses and analgesics were prescribed and 400,000 units of penicillin were administered into the right deltoid muscle.

When seen the next day the patient was relatively comfortable and relaxed. The oral temperature was 99°. At this time periapical, sinus and skull films were taken. A tentative diagnosis of Complex Composite Odontome was made.

The patient was hospitalized the same day and an admission medical work-up done. The following additional facts were recorded:

General Health: good, somewhat limited activity since Rheumatic Fever four years previously.

Head and Neck: ears and nose normal, otherwise as noted previously.

Chest: clear.

Cardio-vascular: no shortness of breath, loud mitral systolic murmur; blood pressure — 120/85.

Gastro-intestinal, Genito-urinary and Neurological: normal.

Impression: 1. Chronic Rheumatic Heart Disease with mitral insufficiency.
2. Tumour of maxilla.

Urinalysis Albumin —trace
Sugar —negative
Reaction —alkaline
Specific Gravity—1.008.

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FIGURE 1.

Left lateral skull plate showing large radiopaque mass involving alveolar process, tuberosity, and maxillary antrum. Note third molar tooth lying against orbit.

FIGURE 3.

Sinus film showing obliteration of posterior portion of left antrum.

FIGURE 2.

P-A view of mass seen in Figure 1. The lateral nasal wall is not involved.

Haematology: Haemoglobin—76%
Leucocytes — 12.5; neutrophiles predominating.

Radiographic Report—(See Figs. 1, 2, 3.)

Maxillary sinuses and jaw:

Sterio views were made.

There is a well circumscribed bony density occupying most of the left maxil

lary sinus extending upward from the alveolar margin of the left maxilla in its posterior half. It is associated with the last two molar teeth. The third molar tooth has not descended and lies in the floor of the left orbit. Some bony reaction extends down to the root of the first molar tooth on the left side.

Summary: There is a bony tumour associated with the underdeveloped teeth on the left side. It is well circumscribed. I believe it represents a Complex Composite Odontome.

Bacteriological Report

The surgery was completed before the report from the Bacteriology laboratory was received. Streptococcus viridans was the dominant organism. Culturing was negative for Streptococcus haemolyticus and for Staphylococcus aureus.

The following orders were left for the patient upon admission:

Dicrysticin—2 c.c. twice a day.
Diet as tolerated.
Up as desired.
APC. with Codeine grs. ss every 4 hours.
Complete blood count.
Saline mouth wash 4 times a day.
Seconal grs. 1ss at bed-time.

To these were added the immediate preoperative orders:

Atropine grs. 1/150 } at one p.m.
Demerol 100 mg. }

Patient to be taken to E operating room at 2 p.m.

Anaesthetic Report

Pulse 78, regular. B.P. 120/85. Respiration 20.

Agents used: Thiopentone 150 mg., Anectine 10 mg., Nitrous Oxide via nasal-tracheal tube with inflated cuff.

Position: Supine.
Operating Time: 40 minutes.

Operation Report

Sterile drapes were applied in the usual manner and the face scrubbed with Cetavlon.

The incision was begun high on the posterior aspect of the tuberosity of the maxilla. It was carried downward and forward along the crest of the edentulous ridge to the distal of the second bicuspid, at which point it followed the necks of the teeth as far forward as the cuspid. The buccal soft tissue was elevated and dissected cleanly from the bone.

The eggshell thin bone on the buccal and posterior aspects of the tumour was removed with a sharp hand gouge and with mallet and chisel. This wide dissection allowed the insertion of elevators which freed the tumour from surrounding bone and maxillary antrum. Traction

FIGURE 4.

The intact specimen. The third molar tooth, which remained in situ when the mass of the tumour was removed, has been repositioned for this picture.

with large rongeur forceps brought the tumour down intact. Fig. 4.

Upon investigation a fully formed tooth was seen lying against the floor of the orbit. This was carefully freed and removed, revealing a deficiency in the orbital floor at this point.

We were then faced with a large surgical defect which included the entire antrum. A careful plastic closure was performed using a combination of mattress and interrupted black silk sutures.

The patient withstood the procedure well and returned to the ward in a satisfactory condition.

Post Operative Orders

Continue Dicrysticin and APC. with Codeine.

Fluid diet 24 hours; then diet as tolerated.

Ice pack to left face for 30 minutes in each hour for three hours.

Pathological Report

The tumour was placed in a normal saline bath so as to preserve its normal colour until photographed. Within an hour the specimen was in 10% Formalin and in the hands of the Pathology department. The report follows:

This specimen consists of a hard, firm mass measuring 3 cm. in diameter. At one end there is an attached tooth. This specimen is rough, pinkish in colour and very firm. The tooth is improperly formed. The roots are short and the upper surface has been chipped. On cross-section, there are no cystic areas. Tumour will be decalcified and specimens taken at a later date.

Summary: This sharply circumscribed mass is composed predominantly of dentine, some portions of which are invaginated by a loose cellular tissue. Where the loose cellular tissue abuts the hard dentinous tissue, there are rows of collumnar cells being derived from the soft pulp. In other areas there are small nests of cells somewhat resembling epithelial pearls, and it is felt that these areas represent foci of enamel formation. The dentine is arranged in broad cummunicating trabeculae, separated by spaces containing calcific debris, granular eosinophilic material and the pearl-like structures. Well formed teeth are not seen histologically. *Diagnosis:* Odontoma.

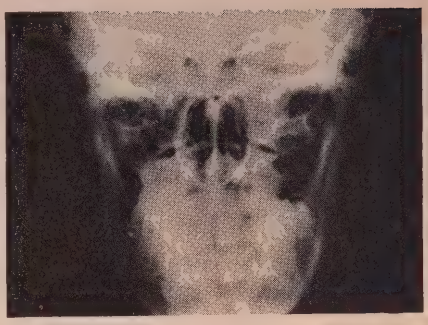

FIGURE 5.

Post-operative P-A view. Compare with figure 2.

Post Operative Course

The post operative course of the patient was uneventful. The oral temperature at no time exceeded 99.8°, and both oedema and temperature had subsided when the patient was discharged on the second post-operative day. The mattress sutures and half of the interrupted sutures were removed on the seventh day, and the remainder on the twelfth day. The incision healed completely by first intention, with no evidence of fistula formation. Routine post-operative films were taken. Fig. 5.

Conclusion

The case report of a Complex Composite Odontome of the Maxilla in a sixteen year old female has been presented. The principal clinical feature of this tumour of dental origin prior to its secondary infection was the edentulous state of the molar region of the left half of the maxilla. It is suggested that wherever teeth are missing, and there is no history of previous extractions in that area, radiographs should be taken to establish the cause of the deficiency.

Palatal Papillomatosis

WILLIAM B. DONOHUE, D.D.S.,* Montreal, Quebec.

A Case Report

Introduction

Papillomas are considered to be neoplasms, characterized by a hyperplasia of the epithelium. They may be either an epithelial response to inflammation, or a disorder of epithelial maturation, in which case they are considered to be true tumors. It has been stated that in the latter instance, the tumor may transgress from a benign to a malignant neoplasm[1].

In some instances large areas of the oral mucosa may be covered with papillomas, so that they appear as a single lesion. This condition is termed papillomatosis.

Thoma has reported an unusual case, occurring in an edentulous 56 year old male[2]. The lesion covered the entire palate and extended on to the soft palate and alveolar ridge. A somewhat similar case has come to my attention.

Clinical Examination

The patient was a 78 year old white widowed female, suffering from aortic stenosis. She was poorly nourished and debilitated.

Examination of the oral cavity revealed that she was edentulous except for four carious lower incisors. A fungating greyish white lesion was observed on the mucosal surface of the upper lip, and extending onto the alveolar ridge and palate. The lesion was approximately two inches by one inch, and composed of filiform like papillae extending one or two millimeters above the surface of the surrounding normal mucosa (Fig. 1). These papillae gave the growth a fur-like appearance. A white exudate could be seen at times along the border of the lesion. There were no other abnormalities in the oral cavity.

FIGURE 1

Papillomatosis of the upper lip and alveolar ridge, the lesion extended on to the hard palate.

The lesion had been present asymptomatically for about six months. It could not be determined if there had been any increase in the size of the lesion during that period. Nor could a family history of any similar lesions be elicited. Examination of the skin revealed no abnormalities, except for a few areas of brown pigmentation (senile keratosis) over the face and neck.

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Laboratory Values

Hemoglobin	68%	Temp. 98.6° F.
R.B.C.	3,400,000	B.P. 212/64,
W.B.C.	7,400	Pulse 94
neutrophils	66%	Serology: Negative
lymphocytes	34%	
reticulocytes	1%	
platelets	200,000	

A biopsy of the lesion was taken from the lip.

Histological Description

Examination of the epithelium reveals a thin zone of parakeratosis (Fig. 2). Beneath this layer there is an irregular acanthosis of the malpighian zone in the form of a pseudoepitheliomatous hyperplasia, associated with focal areas of intercellular and intracellular oedema. (Fig. 3). Inflammatory cells have invaded the epithelium. Normal appearing mitotic figures are seen in the stratum spinosum. The basal cell layer is hyperchromatic in some areas, but there is no disorganization or invasion of the dermis at any point.

There are masses of lymphocytes and plasma cells in the lamina propria. Several Russel bodies are present. The lamina propria is quite vascular, and there are several large capillaries present. (Fig. 4)

FIGURE 2—32X

Note pseudoepitheliomatous hyperplasia and the intense inflammatory reaction.

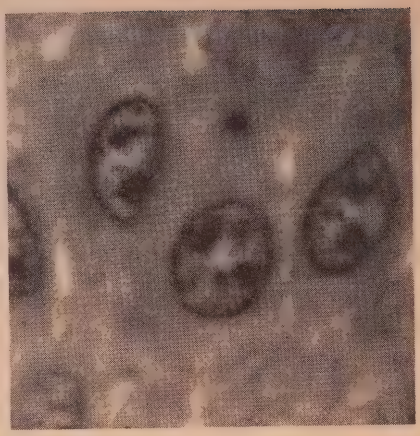

FIGURE 3—1000X

Showing epithelial oedema, the pyknotic neuclei are inflammatory cells.

Because of the unusual nature of the lesion Col. Joseph L. Bernier (Armed Forces Institute of Pathology, Washington, D.C.), Dr. Richard W. Tiecke (Professor of Oral Pathology, College of Dentistry, Northwestern University), and Dr. Patrick D. Toto (Associate Professor of

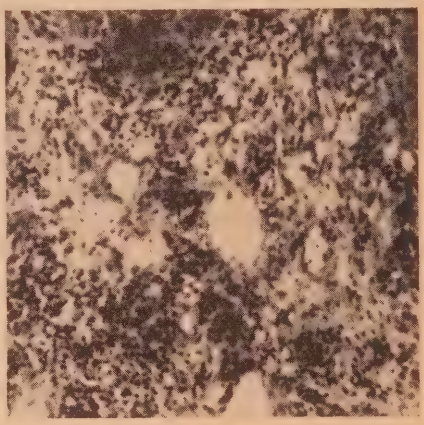

FIGURE 4—100X

View of lamina propria with dilated capillaries, oedema and inflammatory cells.

Oral Pathology, The Chicago College of Dental Surgery of Loyola University) were invited to study the sections.

Col. Joseph L. Bernier's report:

"In the case of Mrs. D. R., I am unable to see any unequivocal evidence of invasion. The dyskeratosis is manifest chiefly in the form of hyperchromatism and cell atypicality is not particularly marked. The principal change is one of pseudoepitheliomatous hyperplasia; however, cellular cohesion is still maintained." Diagnosis: Leukoplakia.

Dr. Richard W. Ticke's report:

"The biopsy in the case of Mrs. D. R., has been interpreted as hyperplastic oral mucosa with leukoplakic changes. The changes seen in the section are not sufficiently marked to warrant a diagnosis of malignancy."

Dr. Patrick D. Toto's report:

"The epithelium is stratified squamous disposed in a papillary pattern with evidence of tangential sections. The epithelium shows oedema, dyskeratosis and long, immature epithelial ridges. There are frequent mitotic figures. The lamina propria is oedematous and densely infiltrated with plasma cells. The basement membrane is undefined in several areas. A collecting duct lined by columnar epithelium and a mixed salivary gland showing degeneration and fibrosis is seen. Diagnosis: verrucal inflammatory hyperplasia with malignant degeneration."

With regard to the diagnosis of leukoplakia Dr. Lester R. Cahn's comments on Dr. Thoma's case are appropriate. "The Armed Forces Institute of Pathology reserves the term 'leukoplakia' for precancerous lesions, which brings up the question 'What is a precancerous lesion?' Hertzles says, 'A precancerous lesion is one which in its normal course will ultimately become cancerous.' He goes on to qualify this statement by adding that such a lesion tends to terminate in malignancy 'but certainly is not yet malignant.' "[2]

Aetiology

The aetiology of these lesions is no doubt partly associated with mechanical irritation, such as is caused by poorly fitting prosthetic appliances. However, there are probably other factors which predispose the epithelium to undergo changes. The involvement of the upper lip, away from the denture bearing area, supports this view.

Martin and Koop have emphasized the role of malnutrition and avitaminosis in the aetiology of precancerous lesions of the mouth.[3] They call particular attention to the capacity of avitaminosis B in causing these lesions. Primary infection and metabolic disturbances may also act to stimulate papillary growth.

Treatment

It is important to distinguish between papillomatosis and inflammatory papillary hyperplasia. The former should be treated by surgical excision and correction of the causes. When the lesion is overlying bone, the periosteum should be preserved to assist in healing. Fisher and Rashid point out that in cases of inflammatory papillary hyperplasis, discontinuing the use of artificial dentures will cause a regression of the mucosal hyperplasia[4]. In both instances, attention should be paid to the patient's oral hygiene and the removal of any irritating agents. In this case, the patient's general condition deteriorated rapidly, and ended fatally. No treatment of her oral lesion was instituted.

Conclusions

An unusual case of palatal papillomatosis has been reported. The nature of the disorder, the probable aetiology, and the suggested treatment have been discussed.

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ABSTRACTS

Tranquilizing Drugs—What are They?

ANTHONY W. GARGUILO, B.S., D.D.S.

A new class of medicinal agents is available to the dental practitioner in answer to the long search for an ideal sedative. These new agents come to us in the form of the ataraxics, which yield tranquility and peace of mind.

These drugs are generally indicated in the same manner for which the older sedatives have been utilized. They have an advantage over the conventional sedatives in that they are not habit forming nor do they produce a cloudy consciousness. There are two large groups of drugs from which to choose the ideal agents for our specific use. Of these, the meprobamate derivatives appear to be the agent of choice when dealing with the dental patient where an ataraxic drug is indicated. In the ataraxic drugs the dental practitioner will find an agent with many potentialities for helping to obtain better patient cooperation and lessen the tension-apprehension states which we encounter in many procedures.

Most important of all, though, we must not place dental patients on these drugs as a routine procedure; we must use them with a great deal of discretion and avoid their promiscuous use without prevailing indications.

Illinois Dental Journal
Vol. 26, No. 5. May 1957

Posterior Occlusion in Complete Denture Construction

CLARE W. SAUSER, D.D.S., M.S.D.

The controversy which rages between the advocates of an anatomic occlusion in complete denture prostheses and those stressing cuspless, nonanatomic occlusal schemes will not be solved except by the application of judgment based upon biologic principles. DeVan has suggested that of twenty edentulous persons, the supporting structures of one will tolerate any type of appliance without suffering appreciable degeneration, and a second will display rapid deterioration under

any management. Between these extremes lie the masses of the denture-wearing patients who require individual management through selective techniques in order to ensure the minimal inflammatory reaction of the mucosa attaching the denture to its osseous base.

It is proposed that a detailed technique producing an anatomic occlusion be utilized only for those patients who have an ideal ridge relationship, are in their prime of life without apparent physical ills, and who will return at proper intervals for examination and necessary adjustment of the occlusal scheme.

A nonanatomic cuspless occlusion with variations of technique is the scheme of choice for patients who have abnormal ridge relations, congenital or acquired bony defects, who are at an advanced age or chronically ill, and for those for whom immediate dentures are to be made.

The Journal of Prosthetic Dentistry
Volume 7, No. 4, July 1957

The Protection of Extraction Wounds

J. C. THOMSON, H.D.D., L.D.S.

Efficient healing of extraction wounds should be not only free of unpleasant complications, but should result in the formation of an adequate and sound residual alveolar ridge to facilitate prosthetic restoration.

A sound blood-clot is a necessary precursor of bone growth within the sockets, and the provision of some protection for the organizing blood-clot helps to avoid loss of the superficial layer of it. Protection, as provided by acrylic plates in the control of haemmorhage in haemmophiliacs, may be applied in normal cases by the use of immediate dentures.

The design of the baseplate is of prime importance to the success of the denture in function and as a wound dressing in influencing the shape of the residual alveolar ridge. Design of appliances is within the province of the dentist, and to control the design of the baseplate of an immediate denture the dentist himself must carve the master model prior to the technician setting up artificial teeth. Compression of marginal mucosa by the denture and displacement of blood within the sockets of unduly deep "socketing" of artificial teeth should be avoided. Immediate denture service is, from many points of view, the most efficient method of prosthesis.

The Dental Practitioner and Dental Record
Volume VII, No. 9, May 1957

Scopolamine as a Preoperative Sedative in Children

ALBERT A. ANTONI, D.D.S., Toronto, and FRED A. HENNY, D.D.S., Detroit.

General anaesthesia is often indicated when minor oral surgery must be performed on children between the ages of three and ten, and some type of premedication facilitates the anaesthesia and surgery.

Scopolamine given orally satisfies all requirements. It produces a short period

of cerebral stimulation which is followed by a prolonged, mild depression of the psychic and motor centres. It has a peculiar amnesic action which may even abolish memory of events that occurred during induction. It is known to lessen restlessness and excessive motor activity, and its depressing effect on secretory nerve endings surpasses that of atropine.

Tablets of 1/150 and 1/200 grain are the only size that need to be kept in stock. For a child two to three years of age, a 1/150 grain tablet is cut in half with a sharp instrument. For a child between four and six years of age, a 1/200 grain tablet is given; and for a child between six and ten years old, a 1/150 grain tablet is used.

The parent can be instructed to give the drug to the child a half hour prior to the appointment, or it can be administered when the patient comes for the surgical procedure.

All patients should receive a routine preanaesthetic physical examination. They should abstain from food for at least five hours prior to surgery, and they should be encouraged to empty the bladder just before going into the operating room.

Scopolamine given orally is a satisfactory drug for preanaesthetic management of child patients. Its use in general dentistry and in paedodontics has yet to be proved, but it appears from the results obtained that it would be of great benefit. No deleterious effects of any importance have been noted.

Journal of Oral Surgery
Volume 15, No. 3, July 1957

A histopathologic evaluation of pulpal response in monkeys after ultrasonic cavity preparation

B. G. BUTT, D.D.S., M.S.; N. O. HARRIS, D.D.S., M.S.D.; I. SHANNON, D.M.D., M.S.D.; R. FIELD, Texas; and H. A. Zander, D.D.S., M.S.

The dentitions of seven rhesus monkeys were utilized in a histopathologic evaluation to determine comparative pulpal reactions after the use of ultrasonic and conventional bur techniques in cavity preparation.

Even though only seven monkeys were evaluated, the total number of teeth studied does provide a reasonable basis for extrapolation of the effects that might be expected in man.

The over-all effect of bur cavity preparation was slightly less noticeable than that noted after ultrasonic procedures. It is doubtful if this difference can be considered significant in view of the small number of animals utilized and the possible human variation in impression recording.

The major pulp pathologic conditions were distributed almost equally between the two groups, and the slight differences in plus recording were dependent on minor variations in secondary dentine formation, small alterations in the integrity of the odontoblastic layer, and minor pulp changes. Although longer term studies are indicated before these minor discrepancies can be considered completely inconsequential, it might be noted that after a two month period subsequent to operative procedures, there is usually little further change in pathologic condition. Changes seen during the course of this experiment, although of short duration when compared to the lifetime of the animal, are of long-term significance when considered in comparison with normally anticipated pulpal reactions.

The Journal of the American Dental Assoc.
Volume 55, No. 1, July 1957

Dental Survey of Philadelphia Preschool Children by Income, Age and Treatment Status

J. M. WISAN, D.D.S., MARTHA LAVELL, M.S.S., and F. HERBERT COLWELL, Dr.PH., Philadelphia.

In order to obtain data to help Philadelphia community agencies to develop an effective city-wide dental program for pre-school children, a dental survey of 2,677 selected children was conducted. Children two to five years of age were examined in private dental offices, in kindergartens, housing projects, day nurseries, health department clinics, dental school clinics and hospital clinics. Comparisons of conditions that seem to be associated with age, economic and treatment status are reported.

The study seems to show that dental decay is widespread in preschool children, particularly at the lower income levels, and that decay begins early and increases rapidly. In addition, the amount of dental care received by children even in the higher income levels is inadequate.

The enormous backlog of dental defects in this age group reaffirms the necessity for optimal water fluoridation as a community preventive measure. Where water is not fluoridated and where the public water supply has only recently been fluoridated, as in Philadelphia, topical application of fluoride should be provided shortly after all the deciduous teeth have erupted. Certainly the data emphasize the importance of dental care and supervision before the third birthday.

The Journal of the American Dental Assoc.
Volume 55, No. 1, July 1957

Fluoride Domestic Water and Periodontal Disease

A. L. RUSSELL, D.D.S.

The periodontal status of residents of three fluoride communities has been compared with the periodontal status of residents of three comparable low or nonfluoride communities. Ages of the persons studied ranged from seven to 78 years. The domestic water supply of the fluoride communities carried about 1.0, about 2.5, and about 8.0 ppm of fluorides, respectively. Fluoride subjects had used the domestic water for from seven to 44 years. Indirect evidence in the two adult groups was opposite in direction. In each case the fluoride group exhibited the more favorable periodontal condition on direct examination.

Native school children in a series of communities, each with about 1.0 ppm of fluorides in its domestic water, were compared with migrant children in the same communities. There was a weak tendency for the periodontal health of native children to improve, relative to that of migrants, as their advantage in water-borne fluoride consumption increased.

Most of the differences were slight. They are not adequate to support a hypothesis that use of a fluoride results in improved health of periodontal tissues. The findings are, however, wholly incompatible with any hypothesis that the periodontal tissues of children or adults are harmed by use of a fluoride-bearing domestic water.

American Journal of Public Health
Volume 47, No. 6, June 1957

A Contribution to the Aetiology and Pathology of Dental Caries

F. DRIAK, M.D.

The all-important significance of diet with regard to aetiology and pathology of dental caries is apparent from investigations of pre-historic man and present day primitive races. Latest research work confirms that view that caries increase with the growth of civilization and the corresponding refinement of diet. A highly developed culture is of necessity accompanied by a high incidence of caries.

The increased knowledge of the aetiology, pathology and pathogenesis of caries, however, has, in recent times, led to a decrease in caries in some of the highly civilized countries. Evidence of this is the successful prevention of rickets; regarded by some writers as even more important than the control of caries by fluoride, that has been carried out on a large scale in recent years. The fact that experiments in diets on groups of children fed on a carefully planned diet, led to a decrease in caries, proved that not only the composition of diet as regards its content of carbohydrates, but also the manner of intake in the daily routine, is of aetiological significance.

Animal experiments too have shown that the carbohydrate content of diet and of the saliva is, under certain conditions, of importance in the development of caries. The role of the saliva, both in preventing and promoting caries, could be further clarified by numerous observations and experiments.

One thing is certain, namely, that caries are caused by a large number of factors of which the predisposing and casual as well as the endogenous and exogenous factors are mostly known. It is now an established fact as regards the micro-organisms in the oral cavity, that the activities of bacteria are quite as important as the forming of the acids, of proteolytic ferments, enzymes, etc. There is no doubt that caries did not develop in experimental animals whose mouths were kept free from bacteria.

Progress in the technique of investigation of fine tissues, especially by electron microscopy, has resulted in new knowledge of the structure and nature as well as the development of the hard substances of the teeth, especially the enamel. The same can be said of the physical, chemical and biological reactions of the dental tissues and their immediate environ, especially the saliva. It is most important that the influence of trace minerals especially of fluorine should be clarified, not only in a general way, but in particular as regards the structure of enamel.

Problems connected with initial caries have been studied and, beside the inorganic parts of enamel, the organic matrix and its influence on the development of caries have also been considered. The fluid content of dentine and enamel, and particularly that of enamel lamellae (enamel cracks) have been investigated, and the interchange between saliva and the pulp chamber retested.

The majority of authors agree that a very small and slow metabolism is present even in the fully developed enamel, a fact demonstrated by investigations with radioactive isotopes. The mechanism of microbiological reactions in dental caries is now regarded as far more complicated than was thought originally by the classical chemicoparasitic theory of Miller.

International Dental Journal
December 1956. Vol. 6. No. 4.

The Use of Antibiotics for the Prevention of Bacteremia Following Oral Surgery

FRANK HOLMES COOLEY, M.S., D.D.S., and SOL HABERMAN, Ph.D.

When blood cultures are made on patients immediately following oral surgery, a high incidence of bacteremia can be demonstrated. When such individuals are given adequate doses of antibiotics such as Terramycin, the incidence of demonstrable bacteria in the blood stream is markedly reduced. This reduction is more evident in the group having no clinical signs of infected teeth or surrounding tissues.

Positive blood cultures were higher when a greater number of teeth was removed at any one time. This incidence of bacteremia was markedly reduced in the premedicated patients by the administration of oral Terramycin 3 hours preoperatively.

The organism most commonly found was Streptococcus viridans. In all cases the strains of Streptococcus viridans isolated showed an in vitro sensitivity to the antibiotic used in this report.

Journal of Dental Research
Vol. 36, No. 2. April 1957.

The Responsibility of a Dentist in a Community Disaster

JOHN W. STONE, D.D.S., M.P.H.

The Civil Defense Committee of the Michigan State Dental Association has formulated the following outline of procedure for the information of the local societies. The points enumerated are those the committee considers to be essential to the successful operation of the course. While these problems may not be encountered in the exact order in which they appear in the outline, it is the opinion of the committee that each of these points will have to be met and solved at some time during the planning or operating phase of the program.

1. Demonstrate an interest in helping to meet the problem of a community disaster.

2. Contact the local Civil Defense authorities to determine the role of the dentists in the local mass casualty care plan.

3. Present the information to the local dental society.

4. Describe the course of instruction in mass casualty care which is available and recommended by the Michigan office of Civil Defense.

5. Organize the course:
   a. Determine the number interested in taking the course.
   b. Select the site, the number and the frequency of class meetings.
   c. Notify the central office of the number of texts required.

6. Establish liaison with the local medical society to secure instructors.

7. Re-stimulate the local dental society and enroll the class.

8. Initiate the course at the earliest possible date.

9. Appraise the course periodically to determine whether or not the aims of the course are being met.

10. Upon completion of the course integrate those who completed the course into the local mass casualty care organization for further training.

The Journal of the Michigan State Dental Association.
Volume 39, Number 4, April 1957

At the recently concluded meeting the of Board of Directors of the Association the following statement was adopted and because of its significance and importance is reproduced here for perusal by all members.

GROUP DENTAL HEALTH SERVICES PLANS

During recent years a considerable number of lay groups and organizations have made approaches to dental organizations requesting information respecting the securing of dental services on a group basis. Three main reasons lie behind these requests.

1. Due to economic changes which have occurred during recent years people in general are in an improved position to purchase dental care.
2. A definite socio-economic trend exists wherein people desire to provide for health services through regular contribution.
3. Medical and hospital services are available on a group purchase basis and as a result a demand exists for dental services on a similar basis.

The Situation

Dental treatment services have been purchased on an individual basis. The group purchase of dental services requires the introduction of new methods. For this purpose negotiation of an agreement between those providing the services and the recipients of the service is a necessity. Such contract represents a definite agreement between the buyers and sellers of dental services.

The buyer must know what he wants to buy and can afford to purchase. The seller must know what he has to offer, at what price and how to administer the services satisfactorily for both parties of the agreement.

Experience has shown that the buyers can be adjusted through education to accept those services best suited to their needs and which the profession is in a position to supply on a satisfactory basis. It is imperative that the profession does not contract for rendering services which are impossible to provide. The type of service may vary greatly to meet the best needs of the group concerned.

Of necessity the second party (representatives of dentistry) to such agreement must first be in possession of definite factual information before entering into negotiations directed toward the signing of a contract of any kind. Certain fundamental and pertinent points arise:

1. Cost

The establishment of cost of service is essential. A fee schedule satisfactory to the members of the profession on the provincial level should be established. This fee schedule should not be considered of a permanent nature but subject to adjustment from time to time. Care should be exercised in being certain that the established schedule is *fair* to *both* parties concerned. The availability of a fee schedule at all times is imperative in order to meet demands that may be presented.

2. Administration

(a) The administration should be under the control of the dental profession on a province-wide basis. Experience has shown that the existing plans under control of the profession have developed and been the most successful. The operation of plans on lower than provincial level results in increased costs of administration and lack of uniformity within a province. Provincial administration gives greater financial stability and minimizes the effects of economic changes in a single municipality. Volume is an important consideration and as the number in the plan increases the per capita cost of administration is reduced.

(b) A non-profit incorporated board or commission (e.g. Dental Services Board) should be established for administration purposes. This board should be separate from other organized dental bodies. The work of the board should be confined to the administration of the plan itself. Questions related to the rendering of service should be dealt with by the appropriate committee of the provincial dental body.

(c) The estimated costs of administration must be included in any contract.

3. Procedure

The establishment of an acceptable fee schedule and administrative board should not be left in abeyance. While under the stress of pressure from some group or organization is by no means the best time for such action. The fee schedule should be established through careful survey by the appropriate provincial body. The means of establishing a non-profit incorporated board may vary somewhat from province to province. Other boards for similar purposes have been established in the provinces. Through inquiry with such established bodies and from legal sources the framework for such a board can be set up in readiness for action and *this* at least should be done without delay.

4. Education

(a) In all plans education forms a most important feature. The dentist must not only be educated to understand the operation details of the plan but it is essential that he know the whole purpose behind the plan. Initially this has been a difficult matter in the establishment of many plans. Whereas in the beginning members of the health professions have opposed in great numbers it has been found that they support properly organized plans after they have been in operation a short time. A real need exists for education of the participating dentist before bringing any plan into operation.

(b) The recipient of the services in the plan must be made fully aware of all details related to the plan. Furthermore, it has been shown that continuing educative effort is necessary for successful operation of such plans.

Conclusion

1. Necessity exists for the development of factual data related to group purchase of dental services.
2. The dental profession should protect itself in being ready to deal with such requests when presented.
3. Such action places the profession in a position to not only meet present demands but should provide proof of capability in administration for future health plans.

EDITORIAL

The Future of Fluoridation in Canada

Another obstacle has been placed in the path of progress in public health by the decision of the Supreme Court of Canada which invalidates the by-law of Metropolitan Toronto which would have given authority to the Commissioner Works to proceed to take the necessary steps to fluoridate the water supplied to the million and a quarter inhabitants of the area. This decision, undoubtedly, will have ramifications extending to all areas in Canada.

Canadians have great respect for their judicial system founded as it is upon the noble traditions of the British Courts. No system in the world has so guaranteed freedom and justice to any individual regardless of his race, creed, or colour. No system in the world has been so free of political influence or political domination. The decisions of our courts, whether or not they completely coincide with our own thoughts or feelings, are held in the greatest respect by our citizens.

The fact that the health professions would have preferred another judgment is immaterial. We accept and respect the ruling of our courts. But it might be wise to understand fully the nature of the Supreme Court decision.

The Supreme Court of Canada was not asked to consider the merits of fluoridation as a public health procedure. It was requested simply to rule whether or not the Council of Metropolitan Toronto had the authority under the existing legislation to order the fluoridation of the area's water supply.

The question of whether or not the Public Health Act or the Municipal Act of Ontario contained permissive legislation was never pertinent. The words fluoride or fluoridation are not to be found in either statute. The matter hinged entirely upon the legal interpretation of Section 41 of the Metropolitan Toronto Act, which conferred upon the Metropolitan Council the right to pass by-laws "for regulating the time, manner, extent and nature of the supply of water from its water works system, and every other matter or thing related to or connected therewith which it may be necessary and proper to regulate in order to secure to the inhabitants of the Metropolitan area a continued and abundant supply of pure and wholesome water . . . . "

The three stages of litigation differed somewhat in respect to the interpretation of that portion of the act. The trial judge ruled that Section 41 did confer upon the council the right to fluoridate. The Appeal Court of Ontario said unanimously that it did not. The Supreme Court of Canada upheld this view but with two dissenting decisions from the Chief Justice and Mr. Justice Locke.

There is now, whether we agree with it or not, support for the view that fluoridation constitutes medication. Mr. Justice Rand stated that "it (fluoridation) is not a means to an end of wholesome

water for water's function but to an end of a special health purpose for which a water supply is made use of as a means." Mr. Justice Cartwright continues in somewhat the same vein: "Its (fluoridation's) purpose and effect are to cause the inhabitants of the Metropolitan area, whether or not they wish to do so, to ingest daily small quantities of fluoride, in the expectation which appears to be supported by the evidence that this will render great numbers of them less susceptible to tooth decay. The water supply is made use of as a convenient means of affecting this purpose. In pith and substance, the by-law relates not to the provision of a water supply but to the compulsory preventive medication of the inhabitants of the area."

Thus for the first time, as far as we are aware, there is a legal ruling establishing that the provision of an essential nutrient, which has as its purpose the prevention of a disease entity, constitutes medication. Legally, of course, it must follow that salt has been medicated when iodine has been added and bread is medicated when baked from vitaminized flour. Any other conclusion would be illogical and contrary to the precedent created by the learned Justices' decision. Therefore further discussion or debate on whether or not fluoridation constitutes medication is purely academic.

Of more immediate concern is the future of this vital public health measure. Obviously in Ontario the enactment of permissive legislation is mandatory if other than the eight communities presently fluoridating are to receive benefits. The eight areas do have a degree of protection as a result of a temporizing measure taken by the Ontario Legislature at the last sitting of the House.

Usually reliable newspapers have reported that some high governmental officials are delighted with the ruling of the Supreme Court and have sighed a sigh of political relief and have announced that the government will wait for leadership from the people before passing legislation to allow communities to decide whether or not they desire fluoridation. Judging by the leadership shown from lay organizations which should be interested, it will be a long, long time before further fluoridation will be possible in Ontario, at least. Unquestionably communities in other provinces will have a long hard look at the Supreme Court decision before deciding to proceed.

From Western Canada has recently come evidence of the apathy which surrounds most public health measures. On June 27th less than 37 per cent of the eligible voters in Lethbridge, Alberta, went to the polls to record their desires in respect to the proposal that the city institute a fluoridation programme. Approximately 60 per cent of those voting were not in favour of the proposal. This, in a province which requires, on the basis of a provincial statute, a 66⅔ per cent majority in favour of such a measure, makes it readily seen how far removed are the children of Lethbridge, from the undisputed benefits conferred by the ingestion of fluoridated water.

The plebiscite which will be watched with the greatest interest will be the one to be held this fall in Calgary. Without question there is no dental society anywhere in the world which has been as dedicated and as assiduous in its efforts to educate its community to the merits of fluoridation. The efforts and examples of these dedicated dentists constitute professional responsibility at its best. Calgary's referendum will be held conjointly with the civic elections and therefore a higher percentage of the voters may be expected to exercise their franchise. The local newspapers, too, have given their full editorial support, and have reported fluoridation in their news columns fairly and thoroughly. Yet fluoridation will be defeated in Calgary.

Realizing the inherent dangers involved in attempting to prognosticate election returns, we, nevertheless, while hoping with all our heart we are wrong, predict that the children of Calgary will continue

to be deprived of a measure which, in 1957, should be their inalienable right to enjoy.

Apathy will defeat fluoridation in Calgary. The medical officer of health will not do it—though he will help. A petroleum engineer will not do it—though he will help. The "Pure Water" faddists will not do it—though they will help. The large mass of voters simply by their unwillingness to bestir themselves sufficiently to go to the polls will defeat the measure just as surely as if they marked a negative ballot.

Home and School Associations will, with the best of intentions, pass resolutions favouring fluoridation but only a very few of the members will help in the dissemination of the information. Service clubs will listen with interest to speakers on the subject and then, in the main, continue with other pursuits. Most young informed mothers will be concerned in desiring such a procedure for their children, but not to the extent of ringing doorbells or telephones to convince others of the benefit. The fact that the procedure is a complex scientific one undoubtedly makes it difficult for lay people to take the initiative in its promotion. Almost all they can do is express confidence in the opinions of the health professions when faced with a technical question.

The absolute illogicity of referring scientific matters to a public plebiscite should, to most intelligent individuals, be apparent. A detractor is not required to prove anything. One physician or dentist in opposition almost balances the weight of opinion of the remaining members of the professions in the area and indeed all the recognized health agencies on the continent. One dissenting physician or dentist gives, ipso facto, indisputable evidence of professional and scientific disagreement. And the onus of proof is invariably placed upon the proponent and how does one prove a negative?

The reader will sense that our view is somewhat pessimistic but our attitude is by no means discouraged. Public apathy is not peculiar only to fluoridation. Two examples will suffice to prove our point: Firstly, in Toronto, the health authorities established a free, Salk anti-polio vaccine programme with special centres to accommodate the 50,000 pre-school children expected. There was an initial rush, but when only 13,300 children were brought in for inoculation, six of the seven inoculation centres were closed. Secondly, there are, even today, eight of our ten Canadian provinces with no provincial enactments requiring that milk be pasteurized. In this age of so-called enlightenment these attitudes are almost incomprehensible.

In most communities, when a sufficient number of people give evidence that they desire fluoridation and it becomes political injudiciousness not to make it possible then it will be provided. In the meantime the dental profession can only continue to provide the treatment and education which are possible within its limited resources. It is tragic however that those who should receive the benefit which fluoridation confers, our children, the citizens of tomorrow and our nation's greatest resource, have no choice but to accept the destiny which the older generations by commission or omission determine. To date, we have let them down rather badly.

Little can be accomplished in preventive medical service without the intelligent cooperation of the family. The physician rendering such service is therefore primarily a health educator. Although health education in the mass has been adopted by schools, health departments and industries, individual and family instruction is the most effective approach. Every health examination from the prenatal period to old age should be a session in health education, with simple explanation of the reasons for various tests, favourable comment on normal findings and instruction on how deviations from the normal can be overcome or held in check. Such procedures are paramount in winning the confidence of the individual and family in the skill and personal interest of the physician.

Henry E. Meleney, M.D.

BOOK REVIEW

Local Anaesthesia & Pain Control in Dental Practice. Prepared by: L. M. Monheim, B.S., M.S., D.D.S. Published by: The C. V. Mosby Co. Pages: 299 with illustrations. Price: $8.75.

The publication of Dr. Monheim's work is an important event for the dental profession. For the first time, a comprehensive treatment of all aspects of the subject of local anaesthesia is available, not only to the dental under-graduate but also the practising dentist. No longer is it necessary for the student or busy practitioner to laboriously search out the answers to the manifold problems pertaining to local anaesthesia that arise from day to day. In this single volume, he will find the accumulation of the author's experience in clinical anaesthesia. Since Dr. Monheim, alone among members of our profession, has devoted his entire career to the study, practice and teaching of dental anaesthesia, his work is a rich storehouse indeed for his colleagues to draw on.

Probably no aspect of the day-to-day practice of dentistry is more neglected than pain control. The irony of that situation is emphasized by the fact that our profession, more than any other, utilizes local anaesthesia. We, who should be the leading authority, lack a thorough understanding of the nature of pain and its control. We fail to realize that pain control is not confined to operative procedure alone; it should cover the anxious preoperative period, and also the immediate postoperative period, with its possibilities for discomfort. There is no procedure in dentistry, Dr. Monheim is firm, that needs to involve pain, providing the dentist has the will to prevent it.

It is impossible to be specific about a work of this scope. Dr. Monheim has comprehensively covered the situations derived from the daily use of pain control in the dental practice. Emphasized in almost every chapter, is Dr. Monheim's thesis that local anaesthesia is nothing more than the practical application of the basic sciences; effective utilization of local anaesthesia depends, then, on thorough knowledge of these sciences.

We welcome Dr. Monheim's work as more than a convenience, immense as it is, to the whole dental profession. The claim, advanced by one of Dr. Monheim's colleagues in the book's foreword, that "this work will open a new era in dental anaesthesiology" is not at all extravagant. Dr. Monheim's own conviction is that pain and dentistry should not — and need not — be synonymous. His book is the best possible proof of the righteousness of his conviction.

R. S. Locke

THE LIBRARY

Additions

AMERICAN DENTAL ASSOCIATION. BUREAU OF DENTAL HEALTH EDUCATION: Patient education illustrated. Trans-vision wall chart. 1955.

BRITISH SOCIETY FOR THE STUDY OF ORTHODONTICS: Transactions 1955. 192 p. illus.

BURKET, L. W.: Oral medicine. 3rd ed. 1957. 558 p. illus.

EUROPEAN ORTHODONTIC SOCIETY. Report of the 31st Congress. 1955. 348 p. illus.

LANKE, S.: Influence on salivary sugar of certain properties of foodstuffs and individual oral condition. 1957. 56 p. tables.

MUHLER, J. C., & HINE, M. K.: A symposium on preventive dentistry with specific emphasis on dental caries and periodontal diseases. 1956. 266 p. tables and fig.

SARNAT, B. G., & SCHOUR, I.: Essentials of oral and facial cancer. 2nd ed. 1957. 297 p. illus.

TALLGREN, A.: Changes in adult face height due to ageing, wear and loss of teeth, and prosthetic treatment. 1957. 122 p. illus.

THE CORPS

L. to R. Major A. J. Gervais, No. 53 Dental Unit, Montreal; Col. D. W. Henry, ADDS Quebec Command, Montreal; Lt. Col. J. E. Merritt, DADDS Eastern Command, Halifax; Major L. A. Cormier, No. 51 Dental Unit, Saint John; and Lt. Col. F. C. Fennell, No. 50 Dental Unit, Halifax. RCDC (M) Unit on exercise at Camp Valcartier in July.

Col. W. E. Meldrum, who retired from the Canadian Army on September 1, was born at Morrisburg, Ont., in August, 1897. He was educated at Lisgar Collegiate, Ottawa, and the University of Toronto, where he graduated as a dental surgeon in 1923. During the 1914-1918 war he served with the RCNVR on the North Atlantic patrol and convoy service, and later as Flag Lieutenant to the Admiral Superintendent, Halifax Dockyard. He served with the RCDC from 1939 to 1949 at Army Headquarters and with the Royal Canadian Navy. In April, 1949, he was appointed Commanding Officer, 12 Company RCDC at Halifax, and in August, 1952, was appointed to command the RCDC School, Ottawa. He assumed his present appointment as Senior Consultant, in the office of the Director-General of Dental Services, Ottawa, in June, 1953, when he was promoted to his present rank. Colonel Meldrum will continue to reside in Ottawa.

THE PROVINCES

Alberta

Central Alberta Dental Society

The Central Alberta Dental Society concluded its spring term with a flurry of activity — not at all too common amongst smaller societies. The last formal meeting was held in Red Deer in May at which Dr. Gordon Minty, of Calgary, gave a very informative talk and demonstration concerning certain aspects of Paedodontics. Actually, this was a slight preview of the table clinic he was then preparing for the C.D.A. convention at Winnipeg.

This was followed by the election of the officers for the year 1957-58.

President: Dr. A. White (Red Deer).

Vice-President: Dr. G. Travis (Red Deer).

Sec.-Treas.: Dr. D. Diedrich (Lacombe).

Directors: Dr. J. Semple (Rocky Mt. House); Dr. Al Hertz (Olds); Dr. F. Leboldus (Rimbey); Dr. Al Goodman (Red Deer).

Clinic Rep.: Dr. O. L. Oatway, and reporter to C.D.A. Journal.

Central Alberta Dental Society Golf Tournament

On June 15th, the Annual Alberta Dental Association Golf Tournament was held in Lacombe with this society playing host to 45-50 participating dentists from all parts of the province. Due to the fine work of Drs. Boyce and Diedrich of Lacombe, this very successful event was climaxed by a banquet at the Lacombe Memorial Centre at which many prizes were distributed as well as the three main trophies.

The big one, of course, is the Alberta Dental Association Trophy, for low gross score, which was presented to Dr. C. D. Husband of Red Deer by the Association President, Dr. R. Campbell of Edmonton. Dr. Husband later went on to win the Canadian Dental Association Trophy during the C.D.A. Convention in June at Winnipeg.

The Denco Trophy, for low net score, was won by Dr. Alexander, of Nanton, who has long been a determined contender. Mr. Bob Heggie, Denco representative, was on hand to congratulate the winner.

Mr. Austin Hay, of Calgary, presented the Ash-Temple Trophy, for society team play, to the Calgary and District Dental Society, which was ably represented by enthusiastic golfers. The Central Alberta Dental Society was runner-up.

The golfing dentists of this province look forward with anticipation to the next annual golf tournament at which the Edmonton and District Dental Society will be host.

O. L. O.

British Columbia

Victoria and District Dental Society

Forty-odd members and guests enjoyed a successful cocktail party prior to the dinner and business session when the society wound up affairs at the last meeting of the 1956-57 term.

Elected by acclamation for the next season were:

President: Dr. T. W. James.

President-elect: Dr. Roy A. Johnson.

Secretary: Dr. E. N. Screech.

Treasurer: Dr. B. E. Metcalfe.

Directors: Drs. G. B. Cranstoun, R. L. Horne and W. W. McLuhan.

Instead of a guest speaker, Dr. R. H. McDougall of the local brigade ably filled in with coloured slides and a travelogue of his recent trip to South America.

College of Dental Surgeons

Elections for officers of the Council resulted in Dr. C. M. Whitworth being named president. Dr. C. R. Hallman fills the newly-created post of vice-president. Registrar is Dr. G. I. Creasy and Dr. W. Ross Upton is treasurer. In addition to his presidential office, Dr. Whitworth is the new representative on the Board of Governors of the C.D.A.

Fraser Valley Dental Society

The July meeting took the form of a social gathering that included wives and children when Dr. W. G. Newby kindly hosted a party at his home in Sardis. Although the weather was a bit too damp to take advantage of the swimming pool facilities, a merry time was enjoyed by all.

Present as honored guests were, Dr. Orville Wright, clinician, and Dr. Ross Upton, executive secretary of the B.C.D.A., both of Vancouver.

This slate of officers was chosen for 1957-58:

President: Dr. Hugh Morse, Haney.

Secretary-Treasurer: Dr. Peter Bokstrom, Haney.

Directors: Drs. K . W. McCann, Whalley; R. O. Croll, Langley; A. H. Patterson, Abbotsford; G. J. Hutton, Chilliwack.

D. H. M.

Manitoba

University of Manitoba Confers Honorary Degrees

Eminent dentists of three countries were honoured at a special convocation of the University of Manitoba on June 25th, when the honorary degree of Doctor of Laws was bestowed upon Dr. Lionel Balding, Chairman of the Council of the British Dental Association, Dr. M. H. Garvin of Winnipeg, a past president and editor of the Canadian Dental Association, and Dr. Gerald D. Timmons, president of the American College of Dentists, and Speaker of the House of Delegates of the American Dental Association.

The ceremony was a highlight of the 55th annual convention of the Canadian Dental Association in Winnipeg.

In his address to the convocation, Dr. Balding said there was an almost universal shortage of trained dentists. Pointing out that the dentist-to-patient ratio is one to 1,900 in the U.S., one to 2,900 in Canada and one to 3,300 in Great Britain, he said the dental recruitment position in his own country is "little short of tragic".

Although the shortage has reached tremendous proportions owing to the advent of the national health service, the number of students entering the dental profession in Great Britain has never done more than replace those ceasing to practise.

"Universities have an important part to play in all this," he said. Their job: to produce a highly qualified band of research workers; to scrutinize their dental curriculums very carefully; to consult and keep in touch with the dental profession and government.

He congratulated the U of M Senate for its "wisdom in deciding to establish a dental school here in Winnipeg."

The degrees were conferred by the chancellor, Dr. Victor Sifton and Dr. Balding was presented by Dr. L. G. Bell, Dean of the Faculty of Medicine. Dr. Garvin was presented by Dr. C. H. A. Walton, Senate representative of the College of Physicians and Surgeons of Manitoba, and Dr. Timmons by Dr. J. C. Wilt, chairman of the department of Bacteriology.

First Dental Class in 1962

The University of Manitoba may be graduating some 30 dentists in 1962 if present plans are carried through. Dr. Hugh Saunderson, president, announced recently the first appointment to Manitoba's Dental School. Dr. J. W. Neilson of the University of Washington has accepted the position of Dean.

The new school of dentistry will offer some assistance in relieving the province's shortage of dentists.

Dr. Neilson, a native of Saskatchewan, has studied at the Universities of Saskatche-

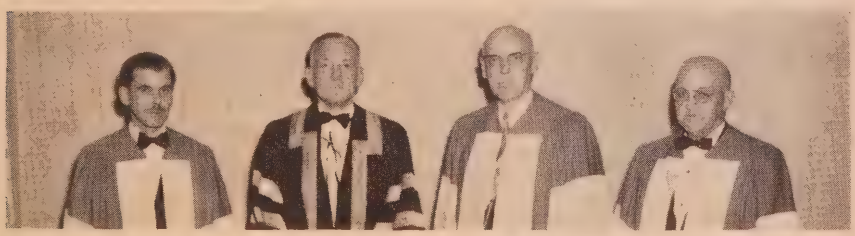

photo: Michel J. Sym.

There was an international atmosphere at the convocation of the University of Manitoba held on June 25th, when degrees of Doctor of Laws were conferred upon three distinguished dentists. Dr. Lionel Balding (left), chairman of the British Dental Association, Dr. G. D. Timmons (right), president of the American College of Dentists and Dr. M. H. Garvin of Winnipeg, (Second from right), former president of the Canadian Dental Association. Standing next to Dr. Balding is Dr. Victor Sifton, chancellor of the University, who conferred the degrees.

CANADIAN DENTAL ASSOCIATION ANNUAL MEETING

Royal Alexandra Hotel, Winnipeg, Manitoba — June 23, 1957.

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1. *Premier Douglas Campbell of Alberta extends the official welcome from the Government of the Province.*
2. *Dr. H. K. Brown (standing left) accepts, on behalf of Dr. W. L. Hutton, Honorary Membership in the Canadian Dental Association from President Johnson.*
3. *Dr. R. B. Campbell, president of the Alberta Dental Association, (standing left) presents a beautiful water-colour by W. J. Phillips, The Valley of the Ten Peaks, to the Canadian Dental Association. President Johnson accepts the gift on behalf of the Association.*
4. *Dr. Lionel E. Balding, Chairman of the Council of the British Dental Association presents a salver to the Members of the Canadian Dental Association from their colleagues in the British Dental Association.*
5. *President Johnson confers Honorary Membership on Dr. Howard J. Merkeley (standing right).*
6. *Dr. Gerald D. Timmons, Speaker of the House of Delegates of the A.D.A. brings the greetings of his Association to the Canadian Dental Association.*

wan, Alberta and Michigan, where he received his degree in arts, dentistry and a Master's Degree in science. He is currently associate professor of periodontology in the school of dentistry at the University of Washington, Seattle. He will begin his work with the new school here this fall.

With the appointment of Dr. Neilson, the government's plans have reached their second stage. First step was a survey conducted by Dr. K. J. Paynter of the University of Toronto, whose report was tabled in the legislature last January.

At that time the minister of education, Hon. W. C. Miller, announced that the government would follow Dr. Paynter's recommendation to build a $1,350,000 dental college to graduate 30 dentists and 15 hygienists yearly. Dr. Paynter proposed that the building be situated near the Winnipeg General Hospital within the city's new medical centre.

Quebec

Société dentaire de Montréal

At a recent meeting of the Société dentaire de Montréal, Dr. Gilles Baril was elected president for the 1957-1958 term.

The other members of the Executive elected were: Dr. Jean-Paul Lussier, first vice-president; Dr. C. Bouillon, second vice-president; Dr. M. Thibault, secretary; Dr. A. Leblanc, assistant-secretary; Dr. P. Manseau, treasurer; Dr. Roger Charette, historian; Dr. R. Dupont, Dr. J. Belanger, Dr. J. P. Lemieux, Dr. J. Guimond, councillors; and Dr. Vincent Tremblay, advisor.

Société dentaire de Trois Rivières

Dr. Jean Gascon has been elected President of the Société dentaire de Trois Rivières for the ensuing term. The election was held coincident with the provincial meeting at Sherbrooke.

First vice-president is Dr. Guy Boisclair, who was charged with the responsibility of organizing the meeting of the societies in Three Rivers in 1959.

The second vice-president is Dr. Jean Therrien of Shawinigan; treasurer, Dr. Vincent Dontigny; and secretary, Dr. Jean Bruneau. Both the latter are from Three Rivers.

The Directors are: Drs. M. L. Bourget, Cap-de-la Madelaine, Lucien Picotte, Louiseville, Richard Poisier, Nicolet, and Jacques Dolbec of Shawinigan.

Ontario

Grey, Bruce and Dufferin Dental Association

Dr. Milton Bye of Owen Sound was elected President of the Grey, Bruce and Dufferin Dental Association when the organization held its annual meeting at the Golf and Country Club recently.

Dr. Harold Bedell of Harriston, was elected vice-president of the Association and Dr. D. Barry, Thurston, secretary. Retiring president, Dr. William Bruce of Kincardine, presided for the meeting.

During the event Dr. M. C. G. Bebee of Owen Sound, President of the Royal College of Dental Surgeons of Ontario, was presented with a gift from the Association by Dr. William Tackaberry of Owen Sound. Dr. Bebee is retiring from practice after 39 years.

Prizes were also presented to the winners of the golf tournament held earlier in the day. While the golf tournament was on, some members of the Association took a cruise on Georgian Bay.

There were about 40 members present for the event along with guests from Orillia, the Faculty of Dentistry, University of Toronto, and the dental trades of Toronto.

90th Annual Convention — O.D.A.

An attendance of 1533 enjoyed the May Convention of The Ontario Dental Association at the Royal York Hotel, Toronto. This, compared with 1421 last year, is evidence of the increasing importance and enthusiasm over this meeting.

Essayists and clinicians from all over the United States and Canada provided a scientific programme which was designed to provide the highlights of recent progress in clinical and academic thought in dentistry.

A very important aspect of any convention is the opportunity to meet confrères, to discuss problems of mutual interest and to have some fun together.

The Convention dinner, dance and floor show was, as always, an occasion for a jolly good time with old friends and their wives. The ladies' committee took charge of this affair, and with the enthusiastic cooperation of the master of ceremonies, Mr. Stanley St. John, the evening was a howling success.

Dental Public Health took a major part in the convention activities, starting with a breakfast meeting on Monday morning, a luncheon on Tuesday, moving pictures each morning of the convention, and a booth on the exhibit floor.

SCENES FROM THE 90th ANNUAL CONVENTION OF THE ONTARIO DENTAL ASSOCIATION

1.

2.

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4.

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1. *A capacity audience listens entranced to Miss Lois Marshall at the Sunday Evening Musicale.*

2. *The opening luncheon.*

3. *Friends meet around the Registration Desk.*

4. *A scene of activity in the Exhibit Hall.*

5. *His Worship Mayor Nathan Phillips conveys the official welcome of the City of Toronto. Head table guests, l to r include Dr. Glen Sawyer, General Secretary of the Ontario Medical Association, Brigadier Elgin Wansbrough, Director-General of Dental Services, His Honour Judge Frank McDonagh, guest speaker, the Mayor, Dr. F. Harold Shepherd, now President of the O.D.A., Monsignor Joseph McDonagh, who pronounced the invocation, Dean Roy G. Ellis, Faculty of Dentistry, University of Toronto, and Dr. C. L. Strachan now President-elect of the O.D.A.*

At the annual meeting of the Ontario Dental Association the officers elected were:

President: Dr. Harold Shepherd, Toronto.
Immediate Past President: Dr. J. A. Boyd, Stratford.
President Elect: Dr. C. L. Strachan, London.
Archivist-Historian: Dr. Edgar A. White.
Secretary-Treasurer: Mrs. R. E. Booker, Toronto.

Benevolence Committee: Dr. R. S. Woollatt, Toronto; Dr. W. R. Jackson, Toronto; Dr. R. G. Hyde, Hagersville.

Dental Public Health Committee: Dr. Marjorie Jackson, Dr. Keith Davey, Dr. R. R. Butler, Dr. M. G. Boyes, Dr. D. L. Rife, Dr. H. A. Swales, Dr. S. T. Peterkin, Dr. K. F. Pownall, Dr. E. A. White, all of Toronto.

The Convention is being held again next May at the Royal York Hotel. The building will be in the process of alteration due to the large new addition. Organization of the arrangements is already under way so that all the features of the programme will be well provided for.

H. A. J. T.

GENERAL NEWS

Ottawa and U.S. Research Grants for University of Toronto

Grants from the Canadian and U.S. Governments are included in donations to the University of Toronto announced recently. The U.S. Department of Health, Education and Welfare is contributing $22,765 over three years for dental research under direction of Dr. G. Nikiforuk and Dr. R. Burgess.

Oral Surgeons Elect Dr. de Montigny

Dr. Gerard de Montigny was elected president of the Canadian Society of Oral Surgeons at the annual meeting held recently in the Royal Alexandra Hotel, Winnipeg.

Other officers elected include: Dr. D. M. Tanner, president-elect, and Dr. J. McCarthy, secretary.

In charge of the arrangements for the meeting were retiring president Dr. R. Bier and secretary-treasurer Dr. J. Passalis, both of Winnipeg.

Expenditures for Alcohol and Tobacco Greatest in U.S.

American people spent nearly two and one-half times as much for alcoholic beverages in 1955 as they did for the services of dentists and physicians, according to statistics contained in a report compiled and edited by the National Health Education Committee, Inc. In the 1957 edition of "Facts on the Major Killing and Crippling Diseases in the United States," the committee revealed that alcoholic beverages — $10,129,000,000 worth — and tobacco products — $5,373,000,000 worth — ranked as the two greatest personal consumption expenditures in the nation in 1955. The $4,087,000,000 expended for physicians' and dentists' services, of which about 75 per cent went to physicians, ranked third. Among other individual items and the amount of money expended for each were: jewellery and watches, $1.6 billion; toilet articles and preparations, $1.5 billion; taxicab fares and tips, $646 million, and pari-mutuel net receipts, $426 million.

Fluoridation in U.S.

Fifty-five communities in the United States started fluoridation programs in the last three months, according to the Public Health Service tabulation for March 1. As of that date, 1,492 communities were participating in programs serving 31,485,409 persons. The communities are supplied by 764 water systems.

The P.H.S. tabulation for December 31 showed that 1956 marked the greatest increase in number of persons receiving fluoridated water in the history of the preventive dental health procedure. During that year, fluoridated water was made available to more than seven million additional persons as compared to an average increase of four million a year from 1951 through 1955, the previous most significant period in the history of the measure. At the end of the year, 31,416,112 persons in 1,487 communities were routinely consuming fluoridated water.

IN MEMORIAM

Hubert A. Croll — Dr. Hubert A. Croll, 84, pioneer dentist of Souris, Manitoba, died at the home of his son, 780 Wolseley Avenue, Winnipeg, on Sunday, June 23rd.

Dr. Croll was an honour graduate and gold medalist of the Royal College of Dental Surgeons of Ontario, where he earned his Master of Dental Surgery Degree. He established his practice at Souris, in 1901, after a few years at Palmerston and Stratford, Ont. Dr. Croll was past president of the Dominion Dental Council and the Manitoba Dental Association of which he was examiner, registrar and secretary for many years.

A leader in the community's drama and musical circles, Dr. Croll was president and producer of the Souris Footlights club, which took top provincial honours. He was a member of the Racine orchestra and the Souris band. Dr. Croll served on the Souris school board, the town's council, and was a past president of the Souris and Glenwood branch, Canadian Legion and honorary president at the time of his death. He was a former member of the board of trade and the Souris Boy Scouts' Association, and served as vestryman of St. Luke's Anglican church.

Dr. Croll was a member of Glenwood Lodge, No. 27, A.F. and A.M., and was presented with his 50th year jewel in 1954. He was a past deputy grand master of the Manitoba Grand Lodge.

Joining the 12th Manitoba Dragoons in 1913 he went overseas with the 10th Mounted Rifles during the First World War and was appointed adjutant of the Canadian Cavalry brigade. He served on the inspection board of all treatment centres in Britain. Later he was given the Victorian decoration.

Survivors are his son, Murray, with whom he had lived for the past few years, a daughter, Mrs. R. J. Riley, two sisters, Mrs. T. S. Acheson and Mrs. T. Shirkie, four grandchildren and two great grandchildren.

Thomas Carlyle Clemence — Dr. Thomas Carlyle Clemence of Toronto, died suddenly in Toronto General Hospital on July 30th, 1957.

Dr. Clemence graduated from the University of Toronto in 1919 and practised in Toronto since that time.

Surviving is his wife, the former Jessie MacGregor, mother, Mrs. T. H. Clemence of Bowmanville, one brother and three sisters.

Dwight Harcourt Mallory — Dr. Dwight Harcourt Mallory died on July 6th, 1957, at the age of 56.

Dr. Mallory was born at Lyn, Ontario, and received his early education at Lyn Public School and Brockville Collegiate Institute. He graduated from the University of Toronto in 1922 and practised in Toronto from 1922-1923, Dundas from 1923-1926 and in Brockville from 1926 to his death.

In 1936 Dr. Mallory held the office of President of the Eastern Ontario Dental Association. He was a former member of the Board of Governors of the Brockville General Hospital.

He was a member of the Masonic Blue, Past President Brockville Rotary Club, member of the Sussex Lodge AF & AM No. 5, and Olsena Fishing Club. A former member of the Board of Education, Brockville, N.P.A.M. 1st Wentworth 1924, Major in the Brockville Rifles 1926-1940. Dr. Mallory was a keen amateur photographer and an ardent fisherman.

He is survived by his wife, one daughter, and one sister.

Harvey B. Gorrell — Dr. Harvey Benson Gorrell, well known dental surgeon of Winnipeg for many years, died suddenly Thursday, August 8th, at the age of sixty-five.

Dr. Gorrell was born in Pilot Mound, Man., and received his early education there. In 1912 he graduated as a doctor of dental surgery from the College of Dental Surgery, in Chicago. He then practised in Killarney and Minnedosa, Man., before opening offices in Winnipeg in 1927. During the Second World War he was attached, as a Major, to the Canadian Army Dental Corps, in Canada.

He had been a member of the Manitoba Dental Society and a past president of the Winnipeg Cosmopolitan Club. He had served on the board of Young United Church and was a member of Valour Road Canadian Legion. He was also a life-long Mason, being a 32nd degree member of Ancient and Accepted Scottish Rite of Free Masonry, a member of Khartum Temple of the Shrine and Chanters of Khartum Temple.

Dr. Gorrell is survived by his widow, the former Devona Pearce; a son, Lt. Hartley, RCASC, Rivers, Man.; three brothers, Thomas, Crystal City, Dwight and Colin, of Pilot Mound; a sister, Mrs. J. Gemmill, Pilot Mound.

John Charles Fitzgerald — Dr. John Charles Fitzgerald of St. Catharines, Ontario, died on July 5th, 1957.

He was born in St. Catharines and received his early education there. He graduated from the University of Toronto in 1899 and practised in Woodstock from 1899-1901 and in St. Catharines from 1901-1953.

Dr. Fitzgerald had been an Honorary Member of the Royal College of Dental Surgeons of Ontario since 1949.

He is survived by his wife, two sons, and two daughters.

J. A. Ernest Daigle — Dr. J. A. Ernest Daigle died on June 7th, 1957, after a long illness. He was 56 years old.

Dr. Daigle was very well known in his area, St. Hyacinthe, Montreal, where he had practised his profession for 25 years.

Surviving are his wife, Adrienne, a son, Dr. Leon Daigle, two daughters, Celine and Edith, four sisters, Misses Rose-Emma, Germaine, Antoinette and Jeanne Daigle, writer and journalist.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th — 8th
1959	Halifax, Nova Scotia	June 21st — 24th
1960	Ottawa, Ontario	September
1961	Saskatoon, Saskatchewan	June 25th — 28th
1967	Toronto, Ontario *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Sept. 22-24,	Eastern Ontario Dental Assoc.	Chateau Laurier Hotel, Ottawa	Dr. A. Slone, Secretary	101 Rideau St., Ottawa, Ont.
Oct. 13-17, 1957	American Institute of Dental Medicine Annual Meeting	The Oasis Hotel, Palm Springs, Calif.	Miss M. G. Lewis, Exec. Secret.	2240 Channing Way, Berkeley 4, Calif.
Oct. 21, 1957	Toronto Academy of Dentistry Annual Dinner	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Oct. 23-25, 1957	Thirty-third Annual Fall Clinic	Montreal, P.Q.	Dr. D. B. Ward, Chairman	Fall Clinic, 1414 Drummond St., Suite 309, Montreal, Que.
Oct. 31-Nov. 2, 1957	American Academy of Periodontology Annual Meeting	Hotel Di Lido, Miami Beach, Florida	Dr. H. A. Hartman	Chairman Pub. Comm., 4187 Pearl Road, Cleveland 9, Ohio
Nov. 1-2, 1957	American Academy Gold Foi Operators	Miami, Florida	Capt. R. B. Wolcott	Navy Dent. Tech. School, Naval Training Center, San Diego, Calif.
Nov. 28, 1957	Toronto Academy of Dentistry Winter Clinic	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow	2298 Yonge Street, Toronto, Ont.
Dec. 9-13, 1957	Greater New York Dental Meeting	Hotel Statler, New York	Dr. C. A. LaBorne, Sec.-Treas.	Hotel Statler, Room 106A.
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	2298 Yonge Street, Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge Street, Toronto, Ont.

UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY. SHORT POSTGRADUATE COURSES

RADIODONTICS

November 4-8, 1957 **Enrolment Limit 10**

This course will be devoted to a study of Dental Radiographic Technique and Interpretation. The intraoral and extra-oral techniques which are in common usage will be demonstrated and participants will engage in a "workshop" and will make radiographs by simple techniques using patients provided for the purpose. Radiographic Interpretation will be dealt with in a comprehensive manner commencing with the basic principles, and later the normal and abnormal appearances will be considered. Where possible there will be correlation of the radiographic appearances with the underlying pathological conditions. Seminars will be conducted for the purpose of discussing some problems.

The course will be under the general direction of Dr. Maxwell N. Rockman, and the guest lecturer will be Dr. H. M. Worth, Radiologist, special lecturer in Radiodontics to the Faculty of Dentistry, University of Toronto.

Tuition Fee $100.00

ENDODONTICS

December 2-6, 1957 **Enrolment Limit 8**

The course will include diseases of the pulp, diagnosis of pulp disease, pulp protection, pulpotomy, pulpectomy, therapy as applied to the pulpless tooth, obliteration of root canals in anterior and posterior teeth, root resection, bleaching discolored teeth, and consideration of systemic diseases in relation to focal infection.

The course will be under the general direction of Dr. G. C. Hare.

Tuition Fee $100.00

ORTHODONTICS

(For the General Practitioner)

March 10-14, 1958 **Enrolment Limit 12**

This course is designed for the general practitioner. It comprises a review of anatomical structure, the development of head and jaws, normal occlusion and, in addition, the aetiology of malocclusion, tissue reaction during orthodontic therapy and modern therapeutic methods for the interception of malocclusion. Laboratory and clinical periods will be scheduled to include patient examination, appliance construction and manipulation. Sessions will be scheduled during which registrants may present practical cases for consultation and discussion.

The course will be under the general direction of Dr. D. G. Woodside.

Tuition Fee $100.00

DENTAL ORAL SURGERY AND ANAESTHESIA

April 21-25, 1958 **Enrolment Limit 12**

The course will consist of a brief review of the fundamentals of surgery, including anatomy, pathology, radiography, differential diagnosis, and pre-operative and post-operative considerations. The systemic factors which might limit or contraindicate the extraction of teeth will be discussed, together with the latest developments in chemotherapy. Instruction will be given in local and general anaesthesia, the pathological relationship of the teeth to the maxillary sinus, fractures of the jaws, cysts, root resections, abnormal frena, malposed and impacted teeth, cellulitis and deep neck infections, flap operations and the removal of difficult teeth and roots. An effort will be made to deal specifically with the problems which confront the general practitioner in his office.

The course will be under the general direction of Dr. J. H. Johnson.

Tuition Fee $100.00

Please address inquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College Street, Toronto 2-B, Ontario.

SHORT GRADUATE COURSES

University of Pennsylvania—School of Dentistry

Dr. Louis I. Grossman—Endodontics—starting October 2 and meeting one day per week for eleven weeks.
Dr. Ernest R. Grainger—Advanced Practices in Functional Treatment—October 7-11, 1957.
Dr. Manuel M. Album—Dentistry for Handicapped Children—November 11-13, 1957.
Drs. Henry M. Goldman and D. Walter Cohen—Periodontal Therapy—December 16-20, 1957.
Dr. Vincent R. Trapozzano—Complete Dentures—December 16-21, 1957.
Drs. Lester W. Burkett and LeRoy M. Ennis—Oral Diagnosis & Roentgenology—January 13-17, 1958.
Dr. Ernest R. Granger—Prosthetic Relations of the Temporomandibular Joint—January 13-17, 1958.

For further information write to: Postgraduate Courses, School of Dentistry, University of Pennsylvania, 4001 Spruc Street, Philadelphia, Pa.

Tufts University—School of Dental Medicine

Refresher Courses:

1. Oral Roentgenology—Oct. 17-19, 1957
2. Oral Medicine—Nov. 25-27, 1957
3. Full Denture Implants—Jan. 6-10, 1958
4. Occlusal Equilibration—Feb. 10-12, 1958
5. Periodontology—Apr. 14-18, 1958

For further information and application write to: Director of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Avenue, Boston, Massachusetts.

Volume 23
Numéro 9
Septembre, 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Relations de l'articulé avec la stabilité des pièces complètes

par PIERRE-YVES LAMARCHE, B.A., D.D.S., Montréal

Il ne serait pas osé, je crois, d'affirmer que la stabilité des pièces prothétiques est, et a toujours été, le problème le plus aigu de toute la prothèse, car sans stabilité le dentier ne peut réaliser d'une façon définitive son but ultime qu'est le rétablissement physiologique et fonctionnel de l'appareil masticatoire.

Il nous est possible de constater que, depuis le début de la prosthodontie, la majeure partie de l'évolution s'est faite en vue d'accroître cette stabilité. Ce fut au début des ressorts fixés aux pièces, vinrent ensuite les empreintes au plâtre, le caoutchouc vulcanisé et le scellement périphérique. On crut alors que le problème était résolu, hélas non, l'instabilité demeurait.

Par la suite, on se rendit compte que la véritable stabilité résidait dans le montage des dents, et que ce montage des dents ne contribuait à la stabilité prothétique que dans la mesure où il permettait librement les mouvements masticatoires de l'édenté et qu'il existait ainsi d'étroites relations entre la stabilité et le frottement fonctionnel des dentiers qu'est l'articulé.

Il ne faut cependant pas confondre stabilité et rétention, car une pièce dite rétentive est une pièce qui résiste aux forces qui tendraient à la déloger de l'arcade grâce à des facteurs anatomiques fournis par le patient, tandis qu'une pièce dite stabilisée est une pièce qui persiste dans sa position par rapport à l'arcade grâce au montage balancé des dents exécuté par le dentiste.

En effet, il est exact que la viscosité salivaire, la forme anatomique des crêtes et leurs relations entre elles sont des facteurs de rétention pour les prothèses; mais ce sont des facteurs fournis par le

patient. C'est pourquoi ils sont susceptibles de se présenter sous différents degrés. Le dentiste n'en a aucun contrôle. Ces facteurs relevant des conditions constitutionnelles du patient sont par le fait même instables et le traumatisme causé par la mastication peut les réduire d'une façon importante.

Le dentiste pour assurer la stabilité aux prothèses devra réduire les traumatismes au minimum en répartissant les forces de la mastication également sur les crêtes, et en réalisant un montage qui fournira un contact constant entre la prothèse et les tissus sous-jacents lors du frottement fonctionnel des pièces. Pour ce faire, il faudra donc réaliser sur un articulateur adéquat les mêmes conditions dont jouiront les prothèses dans la bouche même du patient, et procéder ensuite à un montage s'adaptant parfaitement, d'une façon stable, à ces conditions.

Les enregistrements puisés chez le patient seront: le plan prothétique qui nous fournira l'orientation verticale du plan d'occlusion, l'utilisation de l'arc facial qui situera le maxillaire par rapport aux condyles, l'enregistrement de l'occlusion centrique qui définira la position la plus reculée des condyles dans la fosse glénoide; enfin la reproduction de la position protrusive de la mandibule déterminera la pente condylienne.

A l'aide de ces données, l'opérateur procédera au montage des dents qu'il adaptera aux divers mouvements de la mandibule: d'abord en occlusion centrique ou état statique de la mandibule, ensuite, lors des mouvements latéraux et protrusifs, c'est-à-dire, la dynamie mandibulaire.

Il serait indiqué d'analyser au cours de ces étapes les différents facteurs susceptibles de compromettre ou d'assurer la stabilité des pièces de prothèse complète.

I—Enregistrements puisés chez le patient

(1) Le plan prothétique

Avant de traiter du plan prothétique proprement dit, il serait indiqué de s'arrêter sur la position des boudins de cire sur la crête; en effet, cette position est un facteur de stabilité important dont dépend l'orientation générale des forces masticatrices. En prothèse, chaque édenté est un cas strictement particulier et doit être traité comme tel: d'où la difficulté d'établir des règles générales. Il est cependant un principe, à savoir qu'il est plus facile de stabiliser la prothèse du haut que celle du bas, car le scellement et la rétention naturelle du dentier palatin sont meilleurs que ceux du bas; en conséquence, le dentiste aura avantage à monter la prothèse du bas d'une façon idéale au détriment quelque-

Disposition des boudins de cire sur la crête.

FIG. 1. *Les boudins de cire sont montés dans l'axe interavéolaire. La stabilité du bas est bonne et la langue a assez d'espace pour ne pas gêner les prothèses.*

FIG. 2. *Les boudins de cire sont montés buccalement au bas. Les forces de la mastication tendront constamment à faire basculer la prothèse du bas par une action de levier: d'où instabilité.*

FIG. 3. *Ici les boudins sont montés lingualement au procès alvéolaire du bas, ce qui est idéal pour la prothèse du bas en ce qui concerne la direction des forces, mais l'espace réservé à la langue étant trop restreint, la langue délogera la prothèse du bas.*

fois de la prothèse du haut, sauf dans les cas de plus grande résorption du procès alvéolaire palatin. Normalement, l'axe inter-alvéolaire au niveau des postérieures est de 80 degrés; ainsi l'opérateur devra disposer les boudins de cire du bas légèrement en retrait sur ceux du haut en dirigeant toujours les forces sur la partie linguale du boudin du bas.

Autrement une orientation buccale des forces serait cause d'instabilité résultant d'une force de levier qui aurait pour appui la crête alvéolaire du côté intéressé, comme puissance, les forces de la mastication et, comme résistance, le côté opposé de cette prothèse. (Cf. dessins 1, 2, 3.)

Le rapport entre les crêtes étant très variable, l'opérateur n'aura pour guide que son jugement et ses connaissances de la dynamie pour orienter convenablement les boudins de cire.

Le plan prothétique, qui semble banal et d'utilité purement esthétique, peut devenir un facteur d'instabilité important pour la prothèse. Le plan prothétique détermine le plan d'occlusion des dentures; il détermine en plus d'une certaine façon la direction verticale des forces exercées par la mandibule lors de la fermeture.

Ce plan, contrairement aux croyances de certains prothésistes, n'est pas uniquement une mesure esthétique pour les dents antérieures puisque, si mal situé, ce plan sera cause de glissements soit latéraux soit antéro-postérieurs. Nous savons en effet qu'une force appliquée sur un plan incliné donne naissance à une autre force latérale qui dans le cas présent tendra à déloger la prothèse.

Idéalement, ce plan sera parallèle aux deux crêtes si ces deux crêtes sont elles-mêmes parallèles, sinon il sera bissecteur de l'angle formé par les deux crêtes alvéolaires. Ainsi, les forces tendant à déloger les prothèses seront à leur minimum. (Cf. figures 4, 5, 6)

En règle générale, ce plan est limité antérieurement par le bord inférieur de la lèvre supérieure et est parallèle à une ligne qui relie le milieu du conduit auditif externe au haut de l'aile du nez.

Ainsi il sera avantageux pour la stabilité des pièces prothétiques de procéder avec soin à l'enregistrement du plan prothétique.

(2) L'arc facial

La position exacte du maxillaire par rapport aux condyles nous est fournie par l'arc facial. Il n'y a pas lieu ici de décrire telle ou telle technique, mais plutôt de citer que la majorité de ces techniques sont basées sur des mesures moyennes et que la précision qu'elles apportent peut

Orientation du plan prothétique.

FIG. 4. *Cette orientation du plan prothétique fera que les forces de la mastication tendront à déloger la prothèse du haut en traumatisant celle du bas; de plus, les mouvements de propulsion risqueront d'être bloqués.*

FIG. 5. *Ici cette orientation instabilisera la prothèse du bas et les contacts postérieurs en propulsion seront difficiles à réaliser.*

FIG. 6. *Cette orientation aura pour effet de traumatiser la crête alvéolaire du bas, la prothèse du bas aura tendance à être délogée latéralement. Le balancement des prothèses sera pratiquement impossible à réaliser au cours des excursions latérales.*

Importance de l'arc facial

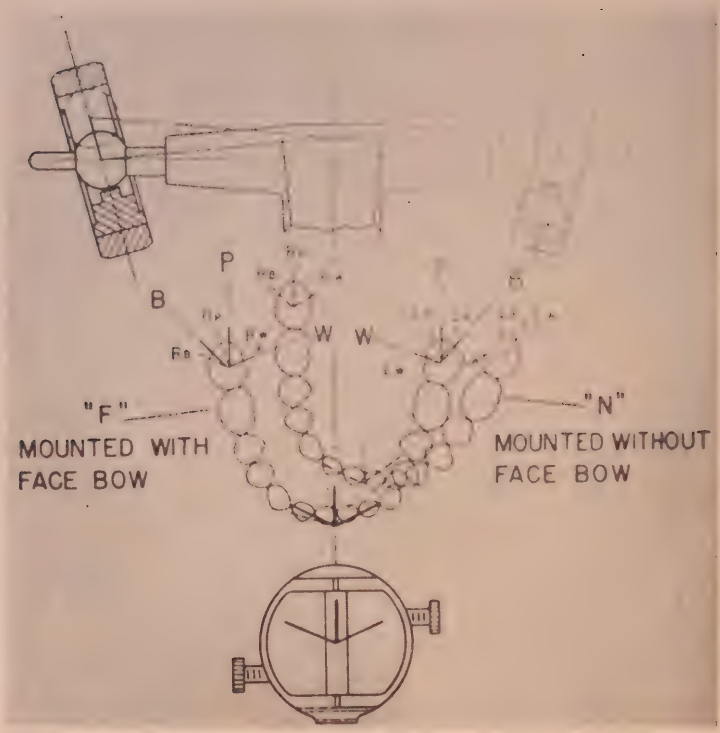

FIG. 7

Nous pouvons constater par cette photographie que les trajectoires décrites par les mouvements fonctionnels de la mandibule sur la face occlusale des dents sont toutes différentes, si l'on se sert d'arc facial ou si l'on ne s'en sert pas.

Si l'opérateur néglige de se servir d'arc facial, il risque de rencontrer des interférences et des contacts prématurés lors de la mise en bouche de ses prothèses.

(Photographie Swenson, page 293).

varier de quelques millimètres. Cette variante peut être considérée comme négligeable, si l'on tient compte qu'elle représente un faible erreur sur une mesure relativement grande qu'est la distance du condyle au maxillaire. Cependant une erreur faite à cette mesure obligera l'opérateur à mouler certains contacts prématurés causés par un écart fait lors de la situation, soit horizontale, soit verticale du maxillaire par rapport aux condyles. (CF. Figure F)

La distance du maxillaire aux condyles determinée par la prise de l'arc facial nous donne le rayon du mouvement circulaire exécuté par la mandibule lors des mouvements latéraux et protrusifs. Pour être balancés, les plans des dents devront

être tangeants à ce cercle. Si l'opérateur change le rayon de ce cercle par un enregistrement erroné de l'arc facial, le balancement des dents, idéal sur l'articulateur, présentera quelques interférences dans la bouche du patient.

Il y aura donc avantage à procéder avec diligence dans la prise de l'arc facial.

(3) L'occlusion centrique

Par définition, l'occlusion centrique est cette relation existant entre la mandibule et le maxillaire lorsque les deux condyles sont dans leur position le plus reculée dans les fosses glénoides et cela sans effort. Cette position est le point de départ des principaux mouvements executés pendant la mastication. De plus, avec l'occlusion protrusive, l'occlusion centrique détermine la pente condylienne. (Cf figures 14-15.)

L'enregistrement de l'occlusion centrique est la plus importante des étapes préliminaires au montage des dents. En effet, cette position du maxillaire et de la mandibule influencera le montage des dents en entier.

Une erreur, quelle qu'elle soit, compromettra, à coup sûr, la stabilité des prothèses, puisque cette relation précise est fournie par l'anatomie même du patient; en outre, cette erreur sera cause d'abord d'instabilité grave et de traumatisme à l'articulation temporo-mandibulaire. La gravité de cette aberration sera due au fait que la mandibule se retrouve en relation centrique vraie dans une grande partie de la journée et même souvent pendant la nuit. En effet, même si la mastication physiologique ne dure que quelques heures, des forces considérables y sont déployées et, à chaque mouvement masticatoire, les dentiers, à leur départ et à leur arrivée, sont en occlusion centrique. Ainsi, il est extrêmement important que cette relation soit reproduite avec exactitude sachant que les dentures chercheront constamment à retrouver leur occlusion centrique vraie, même si l'opérateur a faussé l'occlusion centrique des prothèses.

Les erreurs susceptibles d'affecter la stabilité des pièces peuvent être de trois ordres:

1—Antéro-postérieures—cf. fig. 8, 9, 10.

2—Latérales—cf. fig. 11, 12, 13.

3—Verticales.

Antéro-postérieures:

Les erreurs antéro-postérieures peuvent avoir deux causes différentes: d'abord, si les condyles ne sont pas dans leur position la plus reculée, les prothèses ainsi fabriquées subiront des glissements importants. La prothèse du haut aura tendance à se déloger antérieurement, tandis que la prothèse du bas subira un traumatisme important. Ensuite, si l'opérateur

Erreurs dans la prise de l'occlusion centrique.

FIG. 8. *Ici l'enregistrement de l'occlusion centrique est idéale, les flèches coincident.*

FIG. 9. *La mandibule a été forcée vers l'arrière; il en résultera des glissements instabilisants et une fatigue de l'articulation temporo-mandibulaire.*

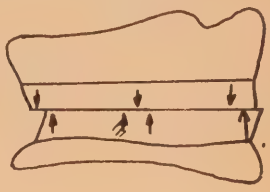

FIG. 10. *La prothèse du bas est en position antérieure à la position déterminée par l'occlusion centrique vraie. Il résultera de ce fait une importante instabilité de la pièce du bas.*

force les condyles à occuper une position trop reculée dans les fosses glénoides, ceci aura pour effet d'instabiliser la pièce mandibulaire. Cette pièce étant fragile de nature, le résultat en sera désastreux.

La mandibule, cherchant constamment à reprendre sa position normale, sera cause de glissements qui s'effectueront sur les plans mésiaux et distaux des cuspes. (Cf. fig. 8, 9, 10)

Erreurs latérales:

Si au cours de la prise d'occlusion centrique, un condyle, pour une raison ou pour une autre, n'est pas assez reculé dans la fosse glénoide, les prothèses qui résulteront d'une erreur semblable subiront des glissements latéraux au cours du passage de l'état de repos en occlusion centrique. Ces glissements s'effectueront sur les plans buccaux et linguaux des cuspes; ce fait sera cause d'instabilité et traumatisme. (Cf. fig. 11, 12, 13.)

Erreur verticale:

Pour que la prise de l'occlusion centrique soit exacte dans l'axe vertical, il faut, qu'au cours de cet enregistrement, la mandibule exerce une pression minime et égale sur chacun des côtés de la pièce. Dans la prise de l'occlusion centrique, les muscles masticatoires impriment une force égale de part et d'autre de la mandibule. Si on oppose à ces forces des résistances différentes, il en résultera un espace plus grand entre les prothèses du côté de la plus grande résistance. Dans la bouche du patient, ceci aura pour effet le contact prématuré de la demi-arcade du côté où on aura opposé le moins de résistance lors de la prise d'occlusion centrique. Le côté opposé se délogera subitement et viendra faire contact avec la prothèse du haut en produisant un bruit caractéristique.

Il est difficile d'éviter de faire erreur dans cet enregistrement, et, étant donné le rôle prépondérant que joue l'occlusion centrique dans le montage des dents, le prothésiste devra user de beacoup de soins pour cette opération et il aura toujours avantage à vérifier cet enregistrement.

Une occlusion centrique juste sera un facteur important pour le balancement des prothéses, puisque l'occlusion centrique fournit une position servant à déterminer la pente condylienne en même temps qu'il situe le point de départ et d'arrivée des principaux mouvements fonctionnels de la mandibule. (Cf. fig. 14, 15.) C'est ainsi que l'enregistrement de

Erreurs dans la prise de l'occlusion centrique

(erreurs latérales.)

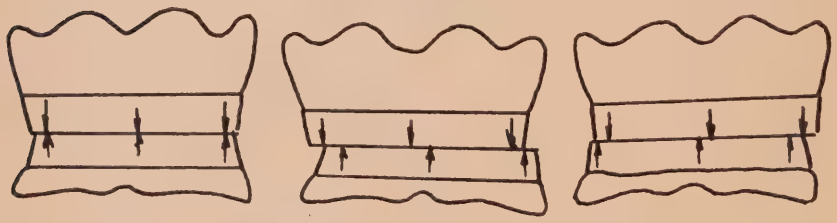

FIG. 11. *Cette figure nous montre le résultat d'un enregistrement exact, les flèches repères coincident.*

FIG. 12 et 13. *Si lors de l'enregistrement de la relation centrique les lignes médianes du haut et du bas ne coincident pas il y aura de nombreux glissements latéraux lorsque la mandibule tentera de reprendre sa position en relation centrique vraie.*

cette position devient une mesure essentielle de stabilité.

(4) *Enregistrement protrusif*:

De tous les enregistrements prothétiques, l'enregistrement de la protrusion est sans contredit, l'un des plus importants, car il sert à déterminer l'inclinaison de la trajectoire condylienne qui joue un rôle primordial dans le balancement de l'articulation. Il faut donc user de beaucoup de soins dans la procédure de cet enregistrement. Une erreur serait cause d'instabilité.

L'occlusion centrique détermine une position du condyle. Pour pouvoir décrire la pente condylienne, il nous faut un autre point que nous fournira l'enregistrement de la protrusion. (Cf. fig. 14, 15)

Le condyle étant appuyé sur un coussin mobile, appelé ménisque, n'est pas nécessairement toujours à égale distance de la paroi de la fosse glénoide; cette distance varie selon la pression exercée par la mandibule. Ainsi pour repérer exactement cette courbe condylienne, l'opérateur aura soin de réduire et équilibrer la pression exercée par la mandibule au cours de l'enregistrement protrusif.

En effet, un enregistrement exact de cette position permettra de réaliser sur l'articulateur les mouvements de propulsion et de latéralité tels qu'ils seront exécutés dans la bouche même du patient.

Si en enregistrant cette relation, il se fait un surcroît de pression sur l'une ou l'autre tête du condyle, le patient exercera une tension identique sur les deux têtes

Rôle des positions d'occlusion centrique et de propulsion dans la détermination de la pente condylienne.

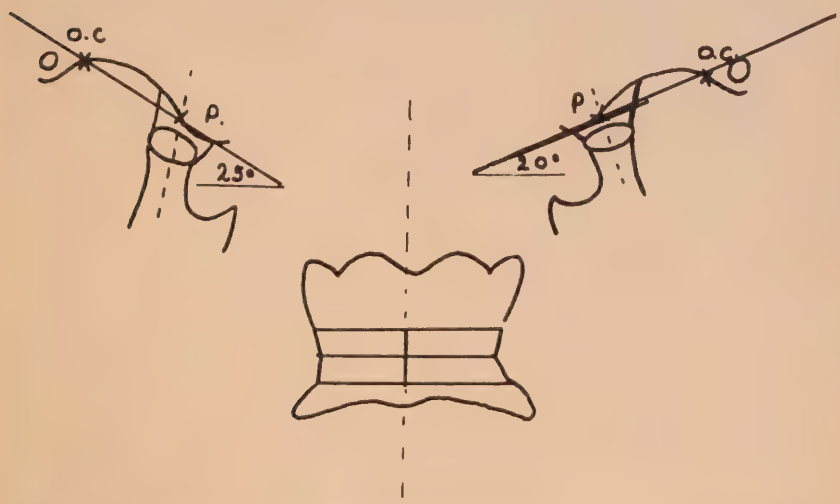

FIG. 14. *Cette figure nous montre que la pente condylienne est déterminée sur l'articulateur par une droite reliant la position du condyle, lorsque la mandibule est en occlusion centrique et la position du condyle, lorsque la mandibule est en position protrusive. O.C.—Position des condyles en relation centrique. P.—Position des condyles en protrusion.*

de ces condyles, amenant un manque de contact et, par le fait même, une instabilité.

Pour que l'enregistrement soit précis, il est nécessaire que la ligne médiane du haut ne cesse de coincider avec celle du bas, c'est-à-dire il faut que les deux condyles avancent sur une même distance. Si la fosse glénoide avait un plan antérieur droit, il ne serait pas nécessaire que les deux têtes des condyles fassent le même chemin. Il n'en n'est pas ainsi, puisque la fosse glénoide décrit un arc de cercle et deux sécantes, partant d'un même point et coupant un arc de cercle à deux endroits différents, déterminant deux angles différents. Ainsi, si en enregistrant la protrusion, les lignes médianes ne coincident pas, les trajectoires condyliennes seront faussées et une prothèse montée d'après de telles données serait vouée à une instabilité avant même d'être balancée.

La trajectoire condylienne est une donnée qui relève strictement du patient, en conséquence, son enregistrement demande une grande précision.

Ayant éliminé toutes les erreurs possibles au cours des étapes préliminaires au montage des dents, nous pourrons maintenant discuter d'une façon objective des facteurs susceptibles d'influencer la stabilité des pièces au cours du montage des dents lui-même.

(à suivre)

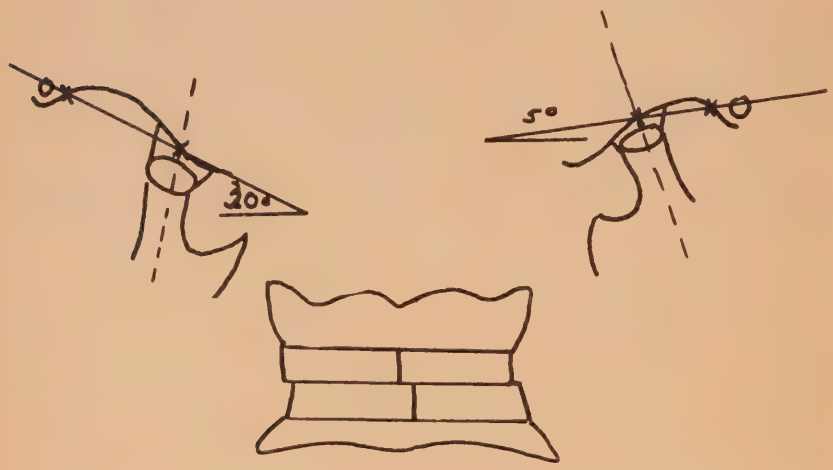

FIG. 15. *Cette figure nous montre de quelle façon un mauvais enregistrement de la position protrusive peut faire varier la pente condylienne.*

ÉDITORIAL

La question des dentistes étrangers

On s'inquiète en certains milieux de la réception mitigée que la profession dentaire canadienne ménage aux dentistes qui laissent l'Europe pour venir s'établir au Canada. Récemment, une personne, qui joue un rôle de premier plan dans les domaines sociaux et politiques de notre pays, nous faisait part de son étonnement et de son incapacité de comprendre les raisons qui justifient les membres d'une profession à poser des conditions assez rigides pour octroyer des licences à des confrères venant d'autres pays.

Tentons dans ces quelques lignes de poser le problème et de synthétiser les arguments qui militent en faveur de l'intégration des dentistes européens au sein de notre groupement professionnel national. En ce faisant, nous établirons nos positions et fournirons des éclaircissements à ceux qui veulent—et avec sincérité aider les émigrés à se tailler le plus tôt possible leur place au soleil dans leur champ propre d'activité.

1) Il est vrai que le Canada manque de dentistes. La proportion des dentistes en rapport avec le total de la population est d'environ 1 par 3,000. Aux Etats-Unis, cette proportion est d'un dentiste par 1,700 habitants et, là, on la trouve trop élevée.

Nos facultés dentaires produisent à peine un plus grand nombre de nouveaux diplômés qu'il y a trente ans et pourtant, durant cette époque, les citoyens canadiens ont augmenté d'environ sept millions.

De plus, à mesure que se développe l'instruction de nos gens, leur éducation et leur préoccupation pour la santé dentaire grandit parallèlement et les porte à recourir davantage aux services des dentistes.

Les facteurs économiques en cours, depuis la dernière guerre, rendent aussi nos compatriotes plus capables qu'autrefois de se payer des traitements dentaires.
Voici la situation au Canada.

2) L'immigration en masse pratiquée par notre pays depuis quelques années amène sur nos rives des dentistes, qui ont fait leurs études et qui ont exercé en Europe, surtout en Europe centrale (Pologne, Tchécoslovaquie, Bulgarie, Hongrie, etc.).

Nous ne discuterons pas des raisons qui portent ces confrères à s'établir au Canada. Acceptons les motifs qu'ils allèguent: incertitude de l'avenir, instabilité économique, surpopulation, politique, prospérité attrayante de l'Amérique, etc.

Soulignons, comme corollaire, que dans le passé (on nous dit que cet état de chose a été corrigé depuis) les agents du gouvernement fédéral chargés de recruter des immigrants désirables pour notre pays ont trompé sciemment ou involontairement -plusieurs dentistes européens, en leur disant qu'ils pourraient exercer librement au Canada et que les formalités pour ce faire étaient des plus simples. Plusieurs de ces confrères d'outre-Atlantique ont été fort déçus à leur arrivée et un certain nombre sont retournés dans leur pays.

3) Pour un profane, le problème semble clair et sans complication: le Canada manque de dentistes; l'Europe peut lui en fournir!

4) Mais pour des personnes familières avec l'organisation de la profession dentaire, il en va tout autrement. L'intégration des étrangers dans les rangs de notre profession n'est pas aussi simple qu'on le croit et elle soulève des considérations sérieuses.

5) Tout le monde admet que, d'une façon générale, les standards de la dentisterie en Amérique sont plus élevés qu'en Europe. Nos facultés dentaires ont constaté le fait à peu près chaque fois qu'elles ont eu comme étudiants post-universitaires des dentistes qui avaient reçu leur formation scientifique en Europe. La philosophie, la conception de l'art dentaire sont différentes. Comme la technique joue un rôle prépondérant dans l'exercice de la chirurgie dentaire, ne soyons pas surpris qu'elle ait pris un essor plus considérable sur notre continent. Le dentiste européen est plus porté vers l'aspect théorique de son domaine et cette mentalité lui a probablement été inculquée par le milieu médical qui l'a formé. On prétend parfois que la médecine et la dentisterie n'auraient jamais dû divorcer; mais le fait demeure que l'enseignement dentaire a progressé plus rapidement là où il a joui de son autonomie.

Donc, selon les normes de l'exercice dentaire en Amérique, le dentiste venant d'Europe ne serait pas prêt à entrer de plein pied dans les cadres canadiens.

6) Mais, le Canada tirerait-il plus de profit à accepter des dentistes, disons de qualité inférieure, plutôt qu'à les refuser, malgré la carence de ces professionnels?

Les dirigeants de la profession dentaire croient qu'en acceptant ces confrères, sans préparation supplémentaire, ils rendraient un mauvais service à la population. Cette façon de faire abaisserait la moyenne du rendement et de la réputation de notre groupe professionnel et éloignerait des jeunes gens qui seraient des candidats désirables.

Nous illustrerons cette idée par deux exemples. En Ontario, on manquait d'instituteurs. On dû embaucher des personnes qui n'avaient pas la préparation adéquate pour enseigner dans les écoles publiques. Les associations d'instituteurs se sont profondément émues de cette décision, parce qu'elle était de nature à faire baisser considérablement le respect que la population avait jusqu'alors pour ceux qui étaient chargés de l'instruction de ses enfants.

A Terre-Neuve, le gouvernement provincial décida un bon jour de permettre l'exercice de son art à tout dentiste, qui pouvait prouver avoir fait un cours d'études dans ce domaine. Cette solution du gouvernement, pour régler le problème de la pénurie de dentistes, fut de courte durée; le premier ministre changea d'idée, quand on lui dit que les jeunes gens de Terre-Neuve aux études dentaires dans diverses facultés canadiennes ne reviendraient pas exercer dans leur province, si celle-ci se montrait si peu difficile pour l'acceptation de ses dentistes.

7) La seule façon raisonnable pour le Canada d'augmenter le nombre de ses dentistes est d'accroître le nombre des facultés dentaires au pays ou d'agrandir celles qui existent déjà et non pas d'octroyer des licences à des praticiens de qualité inférieure.

8) Mais ne devons-nous pas tirer parti, d'une manière ou d'une autre, de ces dentistes qui nous arrivent d'Europe?—Oui, en exigeant d'eux qu'ils fassent un stage dans une de nos facultés dentaires pour y acquérir la conception qu'on se fait en Amérique de l'exercice dentaire et pour y améliorer leur formation scientifique, surtout dans le domaine de la technique.

Les universités, de concert avec les collèges provinciaux, procèdent à peu près toutes de la même manière avec les dentistes étrangers qui veulent se qualifier pour exercer. Examens d'admission aux études ou examen attentif des dossiers des candidats. Cette dernière fonction est extrêmement difficile à remplir, car il y a une grande variété de diplômes décernés en Europe. En Allemagne, par exemple, il y a quatre sortes de dentistes. On a que des notions imprécises, pour différentes raisons, sur les cours d'études dentaires européennes. Et plusieurs soi-disant dentistes n'étaient que des techniciens, en Europe. Ces dentistes sont généralement admis en deuxième année (année où le cur-

riculum comporte beaucoup de technique pré-clinique). Si l'étudiant fait une excellente deuxième année, il est promu directement en quatrième année, sans passer par la troisième.

Cette procédure fait actuellement l'objet de nombreuses discussion; dans certains cas, elle a donné de bons résultats; dans d'autres, de pitoyables.

On peut donc dire qu'en moyenne le dentiste européen, qui veut s'établir au Canada, doit passer deux ans dans une faculté dentaire canadienne; après quoi, il reçoit son D.D.S. et peut se présenter aux examens de licence.

Est-ce là la seule exigence?

Oui et non. Comme, d'après la constitution du Canada, les questions de santé relèvent des provinces, chacune de celles-ci a confié à son organisme légal des dentistes le soin de fixer les conditions d'exercice. La province de Québec est la seule à exiger la citoyenneté avant l'octroi de la licence. Toutes les autres provinces exigent seulement du candidat qu'il signifie son intention de devenir citoyen canadien et qu'il prouve sa résidence légale au pays. L'attitude de la majorité des provinces est plus humaine, car elle ne demande pas qu'un dentiste qui aura pris deux ou trois ans pour se qualifier doive attendre cinq ans pour exercer.

Comme on le voit, le problème est assez complexe et ne peut pas se résoudre facilement. Notre profession-soeur, la médecine, peut solutionner des difficultés du même ordre avec plus d'aisance en incorporant les médecins étrangers dans des services hospitaliers, où ils peuvent s'initier aux conceptions américaines tout en y tirant une rémunération financière. Ne disposant pas de ces moyens, nous devons aborder le problème en face, en faisant preuve d'objectivité, de justice et de charité.

GERARD DE MONTIGNY.

CONSEILS PRATIQUES

Pour empêcher une couronne jacket de tourner sur le moignon

Faites une encoche à la face interne de la dent. La couronne terminée s'ajustera bien à sa place, son scellement n'en sera que mieux assuré (Dental Digest, M. Dooreck).

Pour le scellement d'un inlay récalcitrant

Si pour un raison ou une autre, un inlay ne prend pas sa place d'emblée, le ciment durcissant pose un problème bien embarrassant: insister, le retirer? La décision doit être prise sans perte de temps. Voici un moyen: ayez à votre disposition une solution de bicarbonate de soude, trempez-y une boulette de coton et inondez en la surface et les bords de l'inlay. Le bicarbonate empêche la prise du ciment et vous permet de retirer l'inlay (Dental Digest, E. Bressman).

Pour mieux voir dans nos miroirs

Pour l'empêcher de s'embuer dans la bouche ce qui rend toute visibilité impossible, passez sur le miroir votre doigt légèrement vaseliné et essuyez-le ensuite avec coton. Etant ainsi très légèrement gras, le miroir donnera une image correcte et continue.

L'Information dentaire, 27, 6, 57

Un aperçu des problèmes du Collège des Chirurgiens-Dentistes, de la province de Québec*

par VICTORIEN DUBE, M.S.D., D.D.S., Montréal

Il appartient au président du Collège de profiter de l'occasion qui s'offre aujourd'hui, par l'intermédiaire de l'Association Dentaire de la Province de Québec, d'informer les membres de la profession des problèmes que vos gouverneurs ont et auront à résoudre dans votre meilleur intérêt.

D'abord, quel est le rôle d'un gouverneur? Il consiste à veiller, d'une façon particulière, à sauvegarder les droits, les privilèges et les prérogatives des membres de la profession et à veiller, d'une façon générale, aux intérêts du public que nous devons servir. C'est une fonction ingrate et sans rémunération pour le confrère qui assume cette responsabilité. Tous, nous savons la situation délicate et difficile d'un gouverneur. Il faut être imbu d'esprit de sacrifice et d'abnégation pour accepter ce poste, car il comporte beaucoup plus d'ennuis, de travail et de tracas que de gloriole communément prêtée à ce titre. Tantôt, il est l'objet de critiques acerbes pour n'avoir pas pris l'attitude qu'auraient désirée certains membres; tantôt, il est le défenseur apprécié de ceux dont les droits ont été lésés; tantôt, il est celui qui ramène dans la bonne voie celui qui, pour une raison ou pour une autre, a fait fausse route. Il est aussi celui, qui, avec un esprit bien objectif, doit envisager, prévoir et solutionner les problèmes futurs de la profession. Nous traversons une période difficile. L'avenir de la dentisterie est incertain. La conception de nos problèmes professionnels, la réalisation de nos projets et l'orientation de notre profession exigent de nos gouverneurs qu'ils y apportent le meilleur de leur dévouement, de leur énergie, de leur savoir et de leur jugement.

Notre profession, encore jeune, a été témoin, depuis quelques années, de développements scientifiques nombreux et importants. Nos universités ont ouvert les voies et le Bureau Provincial de Chirurgie Dentaire, a toujours secondé et appuyé les efforts de nos universitaires. Récemment encore, l'exécutif de votre Bureau Provincial nommait un comité chargé de reviser nos exigences scientifiques à l'examen final de la licence. Les membres de ce comité seront appelés à faire une récapitulation de l'enseignement que nos futurs licenciés reçoivent.

Il y aura, j'en suis sûr, une étroite collaboration entre le corps administratif de notre Collège et les autorités de notre faculté. Le résultat de pareille collaboration ne peut que servir les meilleurs intérêts de nos futures générations de dentistes.

A ces considérations scientifiques, se greffent d'autres problèmes d'ordre éminemment pratiques. Que ferons-nous, par exemple, quand le programme d'assurance-santé du gouvernement sera appliqué? Aurons-nous suffisamment de dentistes pour répondre à la demande pressante de notre population? Et surtout, quelles seront les conditions imposées par le gouvernement à notre profession?

Le plan existe, nous le savons. Un certain laps de temps, peut-être très court, nous sépare de sa mise en exécution. Il s'agit pour nous, Gouverneurs du Collège, de nous assurer de cette importante question: serons-nous consultés avant toute décision finale du guvernement? Je vous cite une confidence d'un médecin canadien-français attaché au Ministère fédéral de la Santé qui me posait cette

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* Conférence prononcée le 28 mai 1957 au Congrès de l'Association Dentaire de la Province de Québec, tenu à Sherbrooke.

question troublante: "Advenant l'application du plan d'assurance-santé, serez-vous en mesure d'offrir à la population le service de santé—et je souligne *SANTE*—qu'elle requiert ou serez-vous obligés, en vertu des conditions particulières qui, malheureusement, semblent prévaloir surtout dans la province de Québec, de renoncer à la fabrication de restaurations partielles ou complètes, parce que certains dentistes de chez nous n'auront pas appliqué les principes préventifs de santé, qui seront sûrement à la base de tout plan d'assurance-santé imposé par le gouvernement?"

Lors de la prochaine session provinciale, nous avons l'intention de proposer à la Législature certaines modifications à la présente loi dentaire de la province de Québec. La profession médicale est à refondre ses statuts et nous n'entendons pas être lésés par nos confrères-médecins. L'attitude de certains d'entre-eux à l'endroit de notre profession, pourrait bien, si nous n'y prenons garde, se traduire par un ostracisme injustifiable à l'égard de nos dentistes qualifiés. Il est probable, cependant, que nous réussirons une fois pour toutes, à établir le statut professionnel du dentiste, à l'hôpital comme ailleurs, à la satisfaction des deux corps professionnels. Une chose nous est acquise: c'est la collaboration étroite du gouvernement et sa compréhension des problèmes du dentiste lorsque votre Bureau provincial s'adresse au législateur pour amender ses lois. Et, ici, qu'il me soit permis de souligner le travail précieux du Comité de Législation qui a si largement contribué dans le passé à sauvegarder les droits et prérogatives du dentiste dans la province de Québec. Vous pouvez encore compter sur son plus entier dévouement.

Le Bureau des Gouverneurs, conscient de l'importance du rayonnement de la profession au sein du public, a toujours été très heureux de subventionner les différents organismes dont le but est de répandre le fait dentaire. Ainsi, le Collège a souscrit spontanément à l'Association Dentaire de la Province de Québec, pour l'organisation du présent congrès. Ce faisant, nous considérons, qu'en plus de fournir à nos confrères l'occasion de parfaire ses connaissances, nous permettons à la profession de jouir d'une publicité qui nous fait mieux connaître du public.

Et au chapître de la publicité, le médium qui atteint le plus grand nombre est sûrement notre Ligue d'Hygiène Dentaire de la Province de Québec. Le travail qu'elle accomplit est de plus en plus apprécié du public et de nos confrères qui en bénéficient. L'octroi annuel du Collège à la Ligue d'Hygiène est donc pleinement justifié. Non seulement, il a permis à cet organisme de faire ses premières armes, mais il a servi de base à des subventions généreuses de nos gouvernements. A l'heure actuelle, six dentistes parcourent la province, multipliant les conférences dans les maisons d'éducation, les clubs sociaux, les sociétés dentaires et le reste. La subvention du Collège s'est donc avérée un excellent placement, qui ne peut que continuer à porter des fruits.

Autre moyen de publicité efficace que nous avons eu gratuitement: la télévision. L'an dernier, nous avons obtenu quatre programmes à la télévision. Cette année, malheureusement, aucun. Nous n'avons pas abandonné la partie; nous avons même des raisons de croire, par des contacts déjà établis, en la réalisation prochaine de certains projets intéressants. Et, toujours dans le même ordre d'idée, il sera éventuellement proposé à l'exécutif, de nommer un directeur des relations extérieures du Collège, dont la fonction serait précisément de promouvoir les intérêts du dentiste auprès de tous les organismes de publicité, en fonction toujours du public que nous voulons bien servir. Je puis vous assurer que j'apporte à ce projet ma meilleure volonté, en souhaitant sa réalisation la plus prochaine possible.

Vient maintenant l'exercice illégal. Il n'est pas complètement contrôlé. Mais ceux qui le pratiquent, le font avec de plus en plus de difficultés. Le travail de nos enquêteurs s'avère très efficace. Il

le serait sûrement d'avantage, si nous avions plus de coopération de la part de nos confrères. Chose certaine, d'après les nombreux témoignages que nous avons, la pratique illégale devient un moyen de moins en moins intéressant de gagner sa vie, pour ne pas en dire davantage. Permettez-moi de vous dire que le Président du Collège prend connaissance de tous les rapports qui sont faits au secrétariat et voit personnellement à ce que tous les moyens à notre disposition soient mis en oeuvre pour réduire cette pratique et les frais à leur minimum. Espérons consacrer un jour les sommes dépensées pour cette lutte à l'illégalité à l'éducation du public! J'en émets le voeu!

Enfin, un autre projet, bientôt réalisé, j'espère, sera l'acquisition d'une maison par le Collège, qui répondrait aux besoins de notre sécrétariat et du bureau provincial.

En terminant, une pressante invitation vous est adressée d'assister en grand nombre, au Congrès de l'Association dentaire canadienne qui aura lieu à Montréal, en 1958. Le Collège a confié l'organisation de ce Congrès à la Société Dentaire de Montréal, qui s'est déjà assuré la collaboration des autres sociétés dentaires de la Province.

Merci à la Société Dentaire des Cantons de l'Est pour la chaleureuse hospitalité qu'elle offre aux congressistes et la délicate attention qu'elle a eue d'offrir un lunch aux Gouverneurs du Collège. Sincères félicitations aux organisateurs pour le magnifique succès! A l'Association Dentaire de la Province de Québec, nos meilleurs voeux de réussite pour ses réalisations futures!

Nouvelles de l'Association

Nouvelles figures au Bureau des Gouverneurs

Le docteur J. M. Darcy a été nommé représentant de la Société dentaire de Terre-Neuve pour succéder au docteur F. A. Janes.

Le docteur W. G. McIntosh, de Toronto, a pris la place du docteur P. G. Anderson à compter du 1er juillet. On a annoncé la nomination du docteur McIntosh à la suite de la réunion de mai du Bureau du Collège Royal des Chirurgiens-Dentistes de l'Ontario.

Changement d'adresse du Plan d'Assurance-Pension de l'A.D.C.

Le bureau d'affaires du Plan d'Assurance-Pension de l'A.D.C. est déménagé de Brockville à Toronto. Toute la correspondance au sujet de ce plan doit dorénavant être adressée au:

Plan d'Assurance-Pension de l'A.D.C.
2249 rue Yonge, Toronto 1, Ontario.

Témoignage de la Croix-Rouge Canadienne

Le conseil central de la Croix-Rouge Canadienne a adopté unanimement la résolution suivante à sa réunion annuelle qui a été tenue récemment:

> "Le Conseil central de la Croix-Rouge Canadienne désire exprimer sa vive reconnaissance aux médecins, aux garde-malades, aux dentistes, aux institeurs et aux personnes qui s'occupent d'éducation professionnelle pour le dévouement et pour le temps qu'ils ont consacrés aux différents domaines d'activités de la Croix-Rouge."

Fluoruration: Cour Suprême du Canada

Le Conseil municipal du Grand Toronto avait décidé de fluorurer l'eau de son aqueduc en mai 1955. Une des municipalités qui fait partie du Grand Toronto (le Village Forest Hill) avait prétendu en cour que le Conseil municipal métropolitain n'avait pas

le droit de fluorurer l'eau de consommation d'après les lois existantes. Le juge Mackay devant qui s'était plaidée cette cause, en octobre 1955, avait rejeté la prétention du Conseil du Village de Forest Hill dans le but d'empêcher le Grand Toronto de mettre en acte le règlement qu'il avait passé au sujet de la fluoruration.

Le Village de Forest Hill avait inscrit sa cause à la Cour Suprême de l'Ontario et le juge Pickup avait rendu son jugement, le 19 mars 1956. Ce jugement disait que le texte de la loi de santé de l'Ontario n'accordait pas au Conseil municipal métropolitain de Toronto le droit d'ajouter du fluor à l'eau de consommation. Le Conseil du Grand Toronto en avait appelé de ce jugement à la Cour Suprême du Canada. Le 24 juin, cette cour a rendu son jugement en disant que le Grand Toronto n'avait pas le droit de fluorurer l'eau qu'il dessert à ses municipalités composantes. Il faut remarquer que le jugement de la Cour Suprême ne juge pas de la valeur de la fluoruration comme mesure de santé publique; il s'en tient uniquement sur la question à savoir si le Conseil municipal métropolitain de Toronto a le droit ou non de fluorurer l'eau de son aqueduc, d'après le texte de la loi de santé d'Ontario.

Honneur pour un ancien président, le docteur McIntyre

Le 1er mai dernier, la Société dentaire de Calgary et du District a nommé membre à vie le docteur R. R. McIntyre, qui était à ce moment président-sortant-de-charge de l'Association dentaire canadienne. Ce certificat d'honneur lui fut présenté par le docteur John Clay, ancien président de l'Association.

Ventes des boissons alcooliques

L'Office National de la Statistique vient de publier que la vente des boissons alcooliques au Canada, pour l'année 1955-56, s'est chiffrée à $723,577,000; et les gouvernements ont perçu en droits de différentes natures, durant la même période, une somme de $363,864,000.

Fluoruration aux Etats-Unis

Les Rapports de Santé publique, dans leur livraison de mai 1957, donnent des renseignements détaillés sur l'application de la fluoruration aux Etats-Unis, d'après un bilan dressé à la fin de 1956. Ces statistiques couvrent les années de 1945 à 1956 et on y tire les faits suivants:

A la fin de 1956:

Municipalités qui utilisent le fluor: ..	1,487
Population de ces municipalités: ..	31,416,112
Municipalités qui ont abandonné la fluoruration:	80
Population de ces municipalités qui ont abandonné la fluoruration:	1,902,199
Nombre de municipalités qui ont repris la fluoruration après l'avoir abandonnée:	10
Population des municipalités qui ont repris la fluoruration après l'avoir abandonnée:	222,741

Des dix-huit villes étatsuniennes qui comptent plus de 500,000 habitants, dix ont adopté la fluoruration et d'autres les imiteront bientôt. Dans près de 85% des municipalités qui ont adopté la fluoruration, le Conseil a décidé seul de mettre en force cette mesure. Dans 5%, un référendum a tranché la question et dans 4%, la commission des utilités publiques a pris la décision. On remarque que les petites municipalités ont eu recours à des référendums plus fréquemment.

Quinzièmes Congrès dentaire australien

Les membres de l'Association dentaire canadienne sont cordialement invités à prendre part au 15 ième congrès dentaire australien qui aura lieu à Adélaide, au sud de l'Australie, du 23 au 27 février 1959.

Quatrième Congrès dentaire du Mexique

L'Association dentaire mexicaine invite les membres de l'Association dentaire canadienne à assister à son quatrième Congrès dentaire national, qui aura lieu à Mexico, du 10 au 14 novembre 1957.

Enquête canadienne sur la maladie

Le bulletin no 10 de l'Enquête canadienne sur la Maladie vient de paraître. On met en doute la valeur des statistiques au sujet des maladies dentaires que contient ce bulletin. Le docteur R. M. Grainger, qui fait partie de la section des statistiques médicales du Ministère de la Santé de la province d'Ontario, apporte les commentaires suivants sur cette question:

"Le dernier Bulletin de l'Enquête canadienne sur la Maladie, publié par l'Office National de la Statistique conjointement avec le Ministère de la Santé nationale et du Bien-Etre social, donne des idées générales sur la maladie au Canada en classifiant souvent les diagnostics selon la classification statistique internationale des maladies, des blessures et causes des décès de l'Organisation mondiale de la Santé.

Quand on consulte les renseignements qui ont été compilés, il faut retenir deux choses.

D'abord la définition du mot maladie, apparaissant à la page 5 du Bulletin no 5 et de nouveau à la page 6 du Bulletin no 10, qui vient de paraître. Ce mot "maladie", tel

qu'on l'entend dans cette enquête, signifie toute incapacité pour laquelle on consulte et tout arrêt d'activité normale suffisamment accusé pour que l'individu l'interprète comme un changement dans son état normal de santé. On se rend ainsi compte que la base sur laquelle on se place pour juger d'une maladie est assez subjective; un dentiste qui a la moindre expérience de la clientèle sait bien qu'un patient a une idée assez confuse du bon état ou du mauvais état de sa cavité buccale. Par exemple, peu nombreux sont les patients qui pourraient juger si la mobilité de leurs dents est normale ou si elle est occasionnés par une maladie péridentaire avancée. Une parcelle de nourriture logée en dessous du point de contact peut déterminer des douleurs assez vives et cet état ne signifie pas nécessairement qu'il y a une pathologie grave.

Ensuite, le deuxième point qui doit attirer l'attention regarde la section dentaire de la classification statistique internationale, qui devrait être revisée par un groupe d'experts dentaires. La dernière révision a été entreprise en 1948, avant que l'Organisation mondiale de la Santé s'adjoigne un consultant dentaire. La prochaine révision se fera en 1963 et ce sera l'occasion de corriger les limites que pose actuellement la classification officielle des maladies dentaires.

Récemment, l'Office National de la Statistique s'est servi des classifications internationales de façon à augmenter le nombre des maladies pour que les pourcentages soient plus conformes aux faits. Cet usage nouveau de la classification internationale a été fait à l'aveuglette et n'a réussi qu'à brouiller les renseignements que pouvait fournir la classification internationale. Pour illustrer d'un exemple, disons que l'item 530 qui s'adapte aux "carie dentaires" a été fusionné avec l'item 534 qui s'adapte aux "maux de dents sans cause connue". Ces deux items pouvaient l'un et l'autre indiquer quelque chose, mais, combinés ensemble, ils n'ont aucun sens, puisque le mal de dents chez les adultes peut provenir souvent de troubles de gencives.

En résumé, le Bulletin no 10, qui traite des maladies dentaires est à peu près inutile et il peut même induire en erreur ceux qui ont intérêt à consulter les résultats de l'enquête sur la maladie, à moins qu'ils ne tiennent compte des erreurs qu'ils peuvent y trouver. Le moindre qu'on puisse dire maintement c'est qu'il est temps que les organismes qui s'occupent d'enquêtes dans le domaine dentaire se persuadent de la nécessité de consulter la profession dentaire à tous les stages de leur travail.

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Volume 23
Number 10
Toronto
October 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

Symposium

Cleft Palate—Research and Treatment

It has been estimated by various individuals that cleft palate and lip occurs once in 915 to 1,000 live births. The condition tends to occur more frequently in boys than in girls and occasionally more than once in the same family.

While heredity appears to play an important role in the occurrence of congenital clefts, little is actually known of their cause. It is possible now, however, that many of the adverse effects of clefts may be eliminated if successful measures are instituted before the usual sequelae arise. Treatment is a co-operative venture among the surgeon, the dentist, the otolaryngologist, and the speech therapist, and each has his vital function if treatment is to be successful.

This issue of the Journal is devoted, in its original material portion, to a discussion of the entire field of cleft palate habilitation. The symposium presented constituted a portion of the annual meeting of the Canadian Society of Dentistry for Children held in Toronto on Saturday, May 11th, 1957.

The panel chairman was Dr. M. A. Cox, Chairman of the Cleft Palate Research and Treatment Group in the Hospital for Sick Children, Toronto. The remainder of the participants include Dr. W. K. Lindsay, Surgeon; Dr. J. B. Whaley, director of the Eye, Ear, Nose, and Throat Department of the Hospital for Sick Children; Mrs. B. J. Curtis, geneticist; Miss Ruth Lewis, speech therapist; and Dr. W. K. Spence, orthodontist.

EDITOR.

The Hospital For Sick Children—Cleft Palate Research and Treatment Programme

M. A. COX, M.B.

During the years 1952 to 1954, working at the Hospital for Sick Children, on a Grant from the National Research Foundation and funds from the Junior Red Cross, Dr. Egil Harvold of Norway, demonstrated that much of the deformity residual in the mouths of some cleft palate cases could be remedied through the application of new orthodontic procedures. This work of Harvold stimulated a new interest in hare lip and cleft palate cases and in the possible rehabilitation of many of these individuals, not only through tooth re-alignment but in all aspects of their disabilities, for in spite of good surgery, a proportion of these cases remained handicapped at school, at work, and in their social contacts.

When the Grant from National Research Foundation terminated Dr. Harvold returned to Norway and this work would have lapsed had not the Atkinson Foundation stepped into the breach.

Early in 1955 the Atkinson Foundation was good enough to donate to the Research Department of the Hospital for Sick Children, the sum of $217,000 to be expended over a period of five years, for the study and rehabilitation of those cleft palate and hare lip cases that require it and fell within the age limits of our hospital. In some of the cases this age limit has been extended.

Under the direction of Dr. Andrew Rhodes, Head of our Research Department, a committee was appointed consisting of Dr. Lindsay representing surgery, Miss Ruth Lewis for speech therapy, Dr. Spence for dentistry and orthodontics, Mr. Keddy in charge of records and myself representing the various medical aspects of this problem. Since that time the group has increased to 14 in number, as the work increased and new aspects of this investigation were encountered.

Recently Dr. Mac Johnston has taken over the direction of the dental and orthodontic portion of our programme, with Dr. Ostler doing the prosthetic treatment. Since the appointment of Dr. Rhodes as Dean of the School of Hygiene I have been directing this project.

We have required and graciously received help from all the active departments in the hospital. The committee appointed was to carry out a study and the rehabilitation of cleft palate and/or hare lip cases. I emphasize the word study, for without investigation and study of the various residual handicaps from which many of these cases suffer, no satisfactory programme of rehabilitation could be carried out.

Even though we have been functioning for more than two years, we had some reservations in our minds about appearing before you today, and you must regard what we have to say here as a progress report, and not as dogmatic facts and figures such as we hope to present when our five year programme is completed. We still have much to learn about this problem.

All our cases are vetted at a clinic held each Monday afternoon at which 4 to 8 cases are screened. At that time a com-

plete history is taken and a complete examination done by each service involved in the investigation. Following the examination, the history and the findings of each examiner are discussed by the team as a whole, where all the information gleaned by the various members of the team is evaluated and the future programme for each case is outlined. The whole committee then meets with each parent and the plan of procedure discussed with them, so as to gain their co-operation in the months or years ahead.

Not all hare lip and cleft palate cases require rehabilitation, and to find out what proportion do is one of the objectives of this survey. Most of our cases have been previously operated on in the Hospital for Sick Children and have come to our group through the kind co-operation of Dr. LeMesurier, Dr. Farmer and other surgeons. We have also had excellent co-operation in locating patients from the Provincial and Toronto Public Health Departments and the Ontario Society for Crippled Children.

Up to March 4th, 1957 we have examined 355 of these patients, and of these 306 have been recommended for orthodontic treatments, 215 have been recommended for speech therapy, 295 have had hearing tests. Many of these children have had caries repair at our suggestion from their own dentists. 150 have had routine dental care in the Hospital for Sick Children Dental Department.

Cleft Lip and Cleft Palate—Surgical Aspects

*W. K. LINDSAY, M.D.**

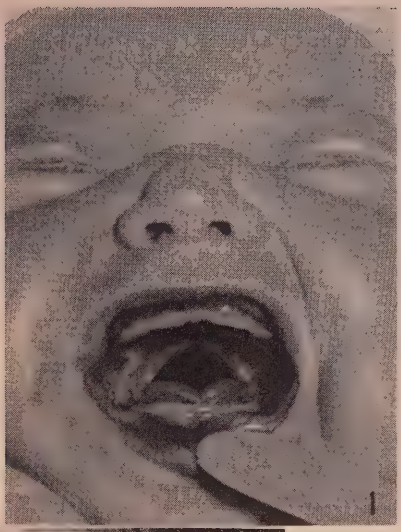
An understanding of the management of cleft lip and cleft palate patients requires an understanding of the original lesions. Each may occur separately or in conjunction with one another. There are many degrees of each individual type and each combination of types. The initial degree of involvement has a direct relationship to the end result of treatment.

Cleft lip (Fig. I) may be unilateral or bilateral and may be represented by a faint groove or minor notch proceeding through to a complete cleft which involves the full thickness of the lip, the floor of the nose and the alveolus. The more severe cleft is usually associated with a more severe deformity of the nose and underdevelopment of the maxilla. However this relationship does not always hold true, and some minor lip clefts have relatively severe associated deformities.

Cleft palate may occur as an isolated entity, (Fig. II) or in conjunction with a cleft lip (Fig. III). There may be submucous involvement only, when the soft palate structures appear normal at first inspection—but on palpation will be thin and attenuated and will usually be associated with a palpable notch at the posterior border of the hard palate. Again the uvula alone may be split, or the soft and hard palates may be involved on one or both sides. The alveolus (Figs. I and III) likewise may be involved on

* Clinical Assistant in Surgery—The University of Toronto. Junior Staff Surgeon—The Hospital for Sick Children.

FIG. 1 Some variations in types of cleft lip. The most minimal degree seen, an identical twin of No. 2. 3. Minor notching. 4. Cleft well into the lip. 5. & 6. Complete unilateral involvement. 7. Bilateral incomplete. 8. Bilateral complete.



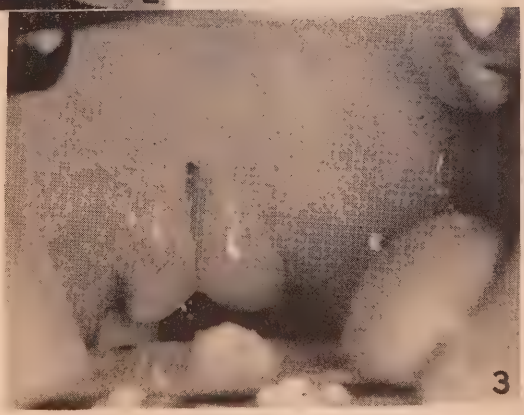
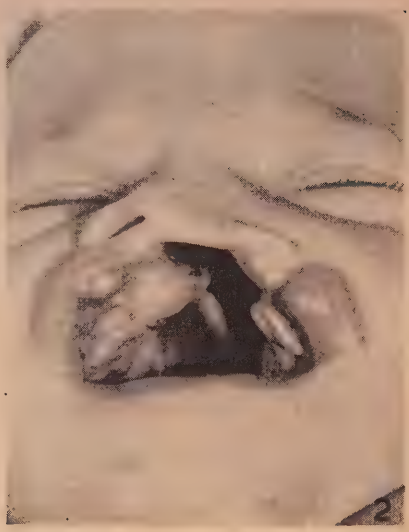


FIG. 11. Isolated cleft palate. 1. Associated with microglossia and micrognathis (Pierre Robin Syndrome). 2. Bilateral incomplete with the nasal septum free in the midline. 3. Cleft Uvula and posterior portion of soft palate.



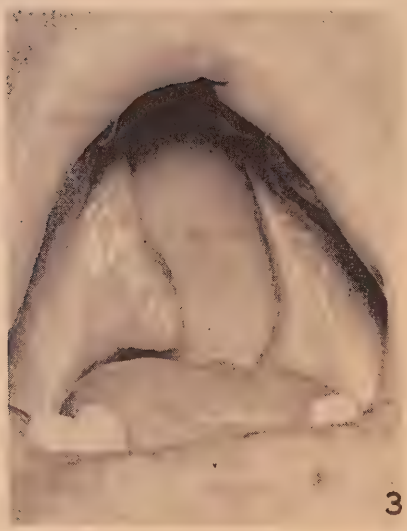


FIG. III. Some of the many variations of cleft palate that may occur with a cleft lip. 1. Bilateral complete. 2. & 3. Unilateral complete.

one or both sides in continuity with the palatal cleft or separated by a degree of bony union across the hard palate.

The management of a cleft lip or cleft palate patient commences at birth and frequently extends throughout the whole period of his growth and development. The patient's management may require the skills of many specialties but his care must not become over-specialized. It is still desirable that his management be under the jurisdiction of one person to provide continuity of treatment and to provide the background for a suitable patient-doctor relationship.

Table I outlines the overall management of these cases, but the needs of each case will vary markedly. In the neonatal period special feeding care is occasionally necessary. It is important that the parents have their many questions answered correctly and that they have the future of the child discussed. It is helpful to the parents, and beneficial to the child, that they be informed that their child has every opportunity to become an acceptable and useful person provided the child has good parents, the proper care and treatment, and satisfactory intelligence. This statement may have to be modified if there are complex associated anomalies, as is the case in a significant number of these patients. Lip surgery is performed at three months of age and palate surgery at eighteen months of age. Following this it is important that the child's speech development be observed. Parental co-operaion must be encouraged and assisted without causing undue alarm and attention. Some cases require speech therapy. A lesser number of cases may require secondary palate lengthening or velopharyngeal narrowing procedures. During this same period the development and care of the teeth must be followed. Revisionary lip and nose surgery may be necessary at some time throughout the growth period.

Lip surgery is carried out in this centre at three months of age because this has been found to be a satisfactory age for traveling and hospitalization. The basic operation used is that of LeMesurier (Fig. IV) [1, 2].

TABLE I

TREATMENT PLAN—
CLEFT LIP AND CLEFT PALATE

1. Neonatal period— Feeding Explanation	4. Two years + Speech development, advise, therapy
2. Three months— Lip surgery	5. Three years + Dental development, advise, therapy
3. Eighteen months— Palate surgery	6. Throughout growth— Possible revisionary surgery

Palate surgery is completed by eighteen months of age in order that the child will not develop too many speech habits. A one stage modified Dorrance push-back operation is used (Fig. V) [3,4]. This type of operation frequently leaves the more severe clefts with residual defects anterior to, through, or immediately posterior to the alveolus. These defects are usually not closed surgically, but are covered by means of the prosthesis which will eventually be required to carry the missing secondary tooth or teeth in the line of the cleft.

The possibilities of later revisionary surgery, carried out in conjunction with prosthetic reconstruction work are illustrated (Figs. VI and VII).

The habilitation of a cleft lip or cleft palate patient requires functional, aesthetic and psychological consideration (Table II). In the case of a cleft palate patient

TABLE II

FACTORS IN HABILITATION OF CLEFT LIP AND PALATE PATIENTS

1. Functional	Speech Deglutition
2. Aesthetic	Face Teeth
3. Psychological	Parents Patient

FIG. IV. Cleft lip operation. 1. The LeMesurier procedure for unilateral lips. 2. & 3. Unilateral incomplete case before and 7 days after operation. 4. & 5. & 6. A bilateral complete case before and 14 days after operation. 7. & 8. & 9. A unilateral complete case before, 7 days and 3 months after operation.

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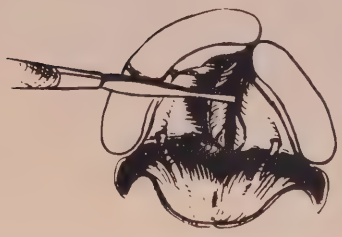

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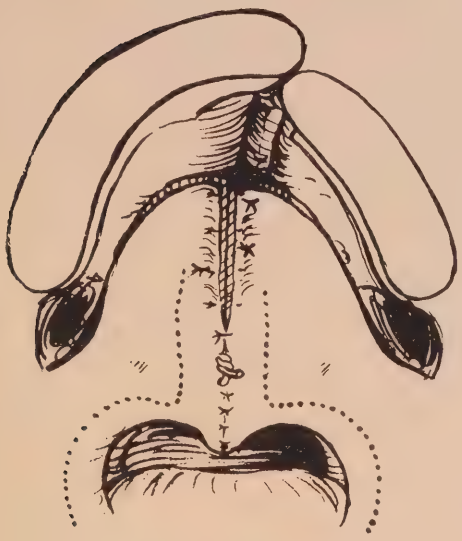

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FIG. V. The one stage modified Darrance push-back palatoplasty.

FIG. VI. 1. & 2. A 17 year old girl who had not accepted follow up treatment for an original bilateral complete cleft lip and palate. 3. & 4. Following Esser inlay graft to buccal sulcus, lip revision, bony and cartiloginous rhinoplasty.

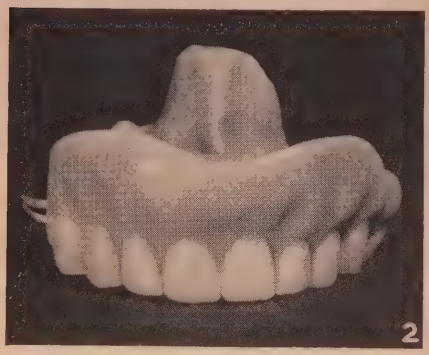

FIG. VII. 1. The same patient as Fig. VI. 2. Her prosthesis. This was considered to be the most expeditious way to rehabilitate this older patient.

TABLE III

TO SHOW SOME OF THE MANY FACTORS RELATED TO THE SPEECH RESULT—355 CASES

Variable	Speech Acceptable*	Speech Not Acceptable
Lip—not cleft	73%	27%
Lip—single cleft	77%	23%
Lip—double cleft	39%	61%
Alveolus—not cleft	73%	27%
Alveolus—single cleft	73%	27%
Alveolus—double cleft	40%	60%
I. Q.—above 100	80%	20%
I. Q.—below 100	62%	38%
Palate operation —before 2 years	74%	26%
—after 2 years	61%	39%
Percentage of each group having previous speech therapy	36%	43%

*Acceptability refers to intelligibility and general social acceptability of each patient's speech as rated by the author.

the most important consideration is the function of speech. The speech results in 355 patients treated at The Hospital for Sick Children are summarized in Table III to show the significance of some of the many variables that are directly related to the end result.

Cleft lip and cleft palate are like any other congenital anomalies today—almost all can be improved but few can be made perfectly normal. With the treatment that is available today, a good home and an average amount of intelligence these children grow up in an acceptable and useful way.

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The Otolaryngologist's Role in the Care of the Cleft Palate Patient

JAMES B. WHALEY, M.D., D.L.O.*

All the patients in this research grouping pass through the Ear, Nose and Throat Clinic, and the Hearing Clinic at the Hospital for Sick Children. Appropriate treatment is carried out when necessary.

The medical profession has long recognized that deafness frequently accompanies a cleft palate. When this additional disability is present it proves a serious handicap in obtaining successful results in speech therapy. In order to speak properly a child must hear properly. The so-called "deaf and dumb" child is not dumb, he simply does not speak because he has not heard what to say. If he hears part of a word he is liable to speak only that part which he hears, and so his speech may be unintelligible to others. Many deaf children are not recognized as such until they fail to speak at the proper age which is around two years. The normal infant usually says his first word at 10 to 12 months. Girls seem to speak earlier than boys and, of course, never stop. At 18 months the child has a vocabulary of about 20 words and at two years knows 250 words, which means he is talking.

If a cleft-palate patient has a hearing loss in the high tones he may not hear many of the consonants and so his speech is lacking in these sounds. The defect may be thought to be due to his cleft palate, when in reality it is caused by his hearing.

Audiometry of various types is employed in an endeavour to assess the incidence and degree of deafness, or hardness of hearing, among these patients. Hearing tests will help to discover any such defect, and the earlier in life the discovery is made, the earlier it may be compensated for by the use of a hearing-aid, if necessary, and by modifying the planning of speech therapy.

The investigation of hearing requires a great deal of time and patience, particularly in the younger children. Older children, of course, are examined more accurately and a chart may be obtained of the true measurement of hearing. Hearing losses are measured in decibels which are units of sound. Examples of these measurements are seen in various sounds of nature, such as the rustle of leaves which is about 10 decibels. A whisper at four feet is 20 decibels. A loud peal of thunder is 70 decibels and a lion's roar at 18 feet is 90 decibels. The limit of ear endurance to sound approaches 130 decibels. Above that, sound becomes pain sensations.

Children with less severe hearing loss may benefit a great deal from medical and surgical treatment, depending on the cause of the defect. A chronically discharging ear should be treated. Nose and throat infections, including sinus and allergic conditions, require attention. One of the commonest causes of low-tone deafness in children is adenoids. Removal of diseased tonsils and adenoids has improved more defective hearing than any other procedure.

From our series of 295 hearing tests on these cleft palate patients we found

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about 25% had some hearing loss. A few of these were congenital in origin and others acquired. Some had a high-tone loss, many had a low-tone loss, and others had both. Many of these cases were the result of infection in the ears earlier in life, and that brings me to another important phase in the Ear, Nose and Throat field in relation to the cleft palate — that of infection.

Upper respiratory infections are quite common in all infants and small children, and those with cleft palates are not exempt. Nasopharyngitis, tonsillitis, and otitis media are met with frequently. Many years ago, it seems that nearly every cleft-palate case, whether operated upon or not, had discharging ears. This in many patients led to some degree of deafness. Certain cases after operative repair of the palate would develop an infection in the tonsils or the adenoids and this would spread to the palate causing a breakdown of the suture line resulting in the re-opening of the palate cleft. A second operation would be required here. Since the advent of the antibiotics, this picture has markedly changed, and the infections in this area, both pre- and post-operatively have diminished greatly. No longer does nearly every patient have running ears; in fact, it is no more common than in any other child. The antibiotics control most of the infections very well.

Because of these infections we used to remove the tonsils and adenoids always, before the palate was repaired. This greatly lessened the chance of breakdown of the operative field by infection. Nowadays the tonsils and adenoids are removed only when there is a definite indication. This might be prior to the palate repair or afterwards.

The removal of tonsils and adenoids in cleft-palate cases is not taken lightly. Great care must be used not to cause undue damage to the throat. If the removal is carried out before the palate repair, as much as possible of the mucous membrane and surrounding musculature must be left, in order that there be sufficient free tissue to aid in bringing the palate edges together. Also the tonsils and adenoids must be thoroughly removed so that no tissue is left which might become infected. When the operation is carried out after the palate repair the problem is just as difficult. The cleft palate which is now united and probably tighter than a normal palate is easily damaged. Great care must be taken not to injure the palate and again to leave plenty of membrane around the tonsillar fossae. Removal of the adenoid tissue requires some thought. This tissue helps to fill in the space behind the palate and at the back of the nose. If it is removed it might leave too wide an opening to close completely by the palate action, and so cause a return to, or an increase in, "cleft palate speech". On the other hand, the openings of the Eustachian tubes to the ears are in this area also, and if there has been any ear trouble, the adenoid must be removed. In these cases one hopes that any increase in the defective speech would soon be overcome by speech therapy. I am pleased to report that in such cases where tonsils and adenoids have been removed at our hosiptal, in recent years, there has been very little, if any, increase in the speech defect.

It has been said that we are not disturbed by that which we know or what we do not know, but that which troubles us is what we know that we do not know. If this makes for intellectual discontent, then it is also responsible for mental growth. Mistakes are a part of the learning process, and we should not discount their asset value. For in our training, we learn rules; in our experience, we learn the exceptions. Most of our great teachers have had the courage to say, "I don't know, but I will find out." As their students, we should reflect this attitude in the practice of our profession.

Alexander L. Martone, D.D.S., M.Sc.
Journal of Prosthetic Dentistry.

Genetical and Environmental Factors in the Etiology of Cleft Lip and Cleft Palate

ELIZABETH CURTIS, M.A.

The importance of heredity in the etiology of cleft lip and cleft palate has been known since the eighteenth century. Numerous studies have clearly demonstrated the tendency for these anomalies to occur more frequently in certain families, but no simple pattern of inheritance could be determined. Recently animal experiments have shown how certain environmental factors can substantially increase the production of cleft lip and cleft palate in strains of mice which are genetically susceptible to these anomalies. Although it is not feasible in humans to experimentally inject cortisone and chemicals during pregnancy, it is felt, nevertheless, that the interaction between genetic and environmental factors in the production of cleft lip and cleft palate children should be closely examined. The establishment of the Cleft Palate Research and Treatment Project provided facilities for such an investigation.

To date we have assembled complete family pedigrees for 329 cases, by personally interviewing at least one parent and sometimes both parents. In addition an attempt has been made to obtain a history of any environmental disturbance during the mother's pregnancy.

Many papers have been published on the inheritance of cleft lip and cleft palate. The largest and most complete is by Dr. Fogh Andersen of Denmark. In 1943 he reported on the family histories of 750 cleft lip and palate children and concluded that two separate genetic entities were involved, namely, cleft lip with or without cleft palate and isolated cleft palate.

Fogh Andersen's theory of inheritance can be briefly stated as follows:

Cleft lip (with or without cleft palate) is inherited as a "conditioned" dominant, incompletely penetrant and with more males affected.

Isolated cleft palate on the other hand, is inherited as a simple dominant, also incompletely penetrant but here more females are affected.

In the examination of the 329 Toronto pedigrees we are attempting to test dominant inheritance as against recessive inheritance. All other types of inheritance have been ruled out.

Theoretically in dominant inheritance the condition is passed directly from an affected parent to an affected child. In the cleft lip (with or without cleft palate) group, there were 13 families in which a parent was affected. However this is only 5% of the total number of families (253). How do we account for the rest? Theoretically one parent in each case must be carrying the gene in dominant inheritance but for some reason, perhaps environmental, this gene did not penetrate.

Also in dominant inheritance 50% of the offspring of an affected parent should show the trait, yet only 5% of the offspring in the cleft lip (with or without cleft palate) group are affected. It will be noticed that the same amount of penetrance (10%) occurs in the parents and offspring.

Analysis of the 76 pedigrees in the isolated cleft palate group gives similar results, with the exception that only 1.5% of the parents and 1.5% of the offspring show the trait.

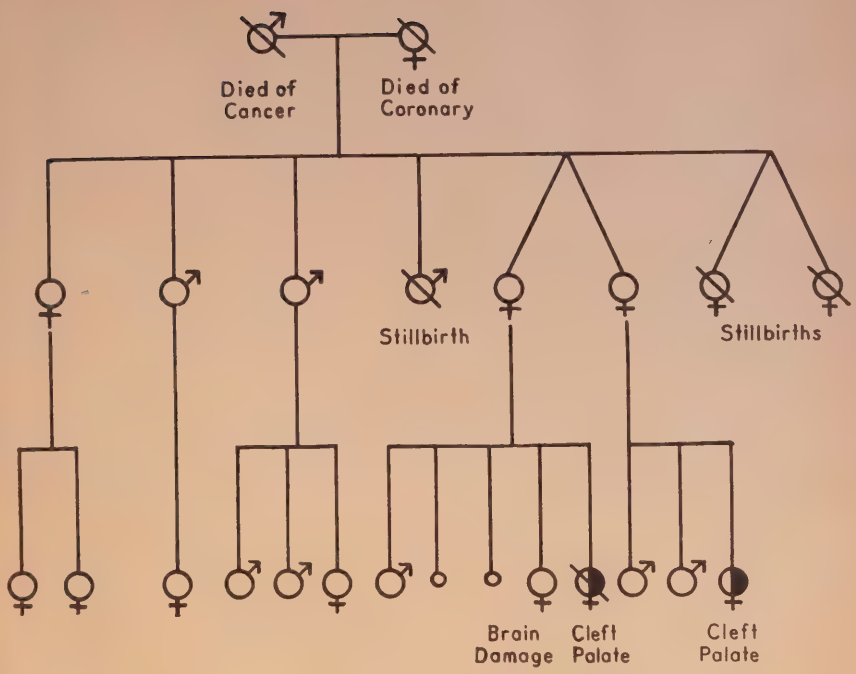

FIG. 1

Pedigree of identical twin mothers who both have cleft palate offspring.

Further evidence for dominance comes from 23 pedigrees in which first cousins are affected. Take, for example, the following pedigree (Fig. I).

If a recessive gene is responsible, the affected individuals (in this case the first cousins) must receive one recessive gene from each parent. The parents (the twins) would each have had to marry a carrier of the recessive gene. The chance of this is slight. It seems more likely that in this pedigree and in similar ones where sibs have affected children that the anomalies are a result of dominant inheritance where only one gene is necessary for the condition.

In recessive inheritance of rare genes the parents are usually normal and 25% of the offspring are affected. The high frequency of normal parents is certainly in favour of a rare recessive gene. However it is still evident that the gene is not fully penetrant because the number of affected offspring does not agree with the expected 25%.

Also in recessive inheritance of rare genes the rate of cousin marriages among the parents of affected individuals is higher than that of the general population. With the marked decrease in family size (and therefore less cousins to marry) it is believed that the frequency of cousin marriages is approaching 1/1000 as compared with the frequency of 8/1000 formerly seen in Europe. The observed rate of cousin marriages in the present cleft lip and palate data is 8/1000. This figure is very high if 1/1000 is the correct

estimate for cousin marriages in Canada. It is obvious, however, that a more reliable estimate is required before any conclusions can be drawn.

A key point in Fogh Andersen's argument for two separate genetic entities was the difference in the sex distributions. The Toronto and Danish studies agree that for cleft lip (with or without cleft palate) there are nearly twice as many males as females affected. Some lack of agreement is seen in the sex ratios for isolated cleft palate in that the Toronto data do not show the marked increase in females.

The chance association of both genetic entities may be represented in the two following pedigrees (Figs. 2 and 3).

Fogh Andersen has indicated that a person with isolated cleft palate will not have children with cleft lip and vice versa. Yet in Fig. 2 the mother and maternal grandmother have isolated cleft palate while the second child has both cleft lip and cleft palate.

In Fig. 3 one twin mother has a child with cleft lip and palate while her cotwin has two affected offspring, one with cleft lip and one with isolated cleft palate. Again there is association of the two entities.

As stated previously, experimental work on mice has shown that certain environmental disturbances during the early development of the fetus produce clefts in some cases. In the present study about ¼ of the mothers of both the cleft lip and cleft palate children had a history of some disturbance during the first trimester of pregnancy. The environmental causes found are:

1) History of previous miscarriage—6.6%
2) Gestational bleeding—4.5%
3) Irregular menses—3.6%
4) Acquired illnesses—5.4%
5) Severe nausea and vomiting—1.5%
6) Operations and accidents—0.9%.

There is no control data available at the present time for normal motherhood, but discussions with physicians make us feel that these disturbances occur with equal frequency in the general population.

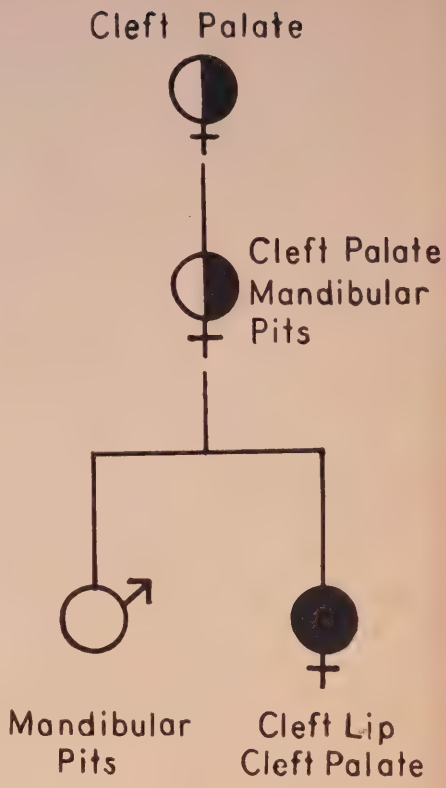

FIG. 2

Pedigree in which a child with both cleft lip and palate is born after two generations of isolated cleft palate.

Strean and his associates (1956) have pointed out that emotional stress during pregnancy may result in a cleft palate child. This information is difficult to obtain even in a personal interview. Perhaps, however, one emotional stress which a mother can have is the thought of a second cleft lip and cleft palate child and yet the recurrence rate among such offspring is only 4%.

Penrose (1934) and others have shown

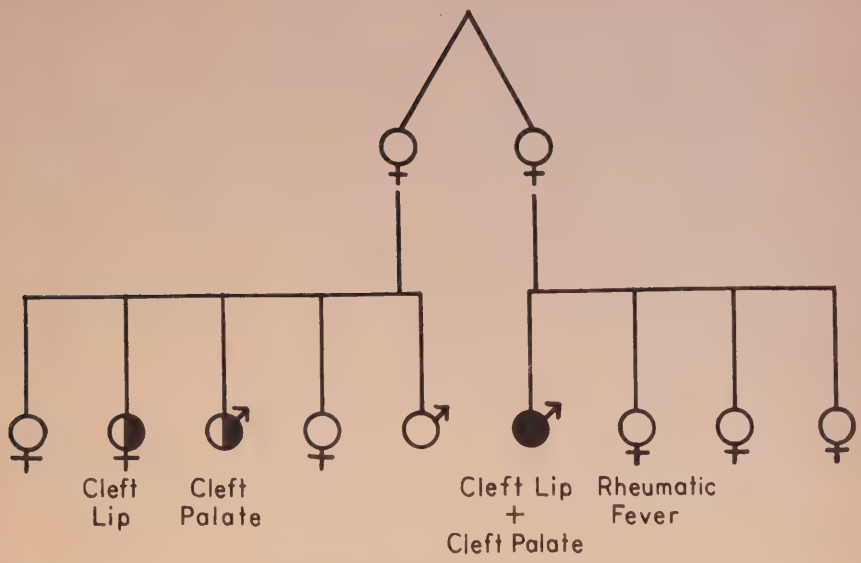

FIG. 3

Pedigree of normal twin mothers with mixed cleft lip and cleft palate offspring.

that congenital anomalies are more frequent in the offspring of older mothers and in later birth ranks. In our data neither of these factors was of importance.

A significant number of associated anomalies was found in both groups especially in the isolated cleft palates where the figure is thirty times that seen in the general population (Fig. 4). The discrepancy between the Toronto and Danish data may mean that our examination was more exhaustive or that we are dealing with severer cases or that genetically the two populations differ.

No explanation can be given at the present time for this high incidence of associated anomalies. When there is a positive family history there is no increase in the number of associated anomalies. Moreover, the association of cleft palate with conditions such as mongolism and congenital heart disease makes us feel that here the anomaly is just part of a generalized disturbance in development.

Of particular interest is the risk that a second child with either cleft lip or

	C.L. ± C.P.		C.P. alone	
	Toronto	Danish	Toronto	Danish
Present	14.4%	4.4%	32.9%	9.3%
Absent	85.6%	95.6%	67.1%	90.7%

FIG. 4. Incidence of associated congenital anomalies.

	C.L. ± C.P.	C.P. alone
Parents normal. No family history.	3.9%	1.5%
Parents normal. Family history.	7.8%	11.7%
One parent with C.L. ± C.P.	14%*–25%	——
One parent with C.P. alone.	——	17.0%

*Figure obtained from Fogh Anderson.

FIG. 5. Recurrence rate in siblings.

cleft palate will be born into a family. From our data we have calculated the following risks (Fig. 5).

It can be seen that the risk increases if there is a positive family history or if one parent is affected. These risk figures should be used with caution because the condition may be due to a number of situations. If, for example, a mutation has occurred the chance of recurrence in sibs is zero whereas if the condition is due to a gene with reduced penetrance the chance is very appreciable. Careful family histories should therefore be taken before attempting to counsel a patient.

In summary, we feel that heredity is of prime importance in the etiology of cleft lip and cleft palate. At this stage in the genetical study we have not decided as to the mode of inheritance. It seems clear that the environmental factors already investigated do not affect the penetrance of the gene nor does there appear to be any interaction between these factors and heredity.

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The Orthodontist and the Habilitation of the Cleft Palate Patient

WILLIAM J. SPENCE, D.D.S., M.Sc.D.

As you may well be aware there is a considerable variance in the thinking and methods of treatment dentally for cleft palate patients in the different parts of the world and indeed in this continent. Therefore this paper will only attempt to outline the thoughts and treatment techniques used by the members of our team at the Cleft Palate Treatment and Research Centre of the Hospital for Sick Children in Toronto. These techniques are what we, today at least, believe to be the best, having examined the literature and having visited other such groups in various parts of this continent. Tomorrow, however we will of course hope to learn or develop more efficient means of achieving as complete dental habilitation as is humanly possible.

The first dental examination is carried out by the orthodontist who is able only at that time to do an examination by mouth mirror and dental probe and thereby to record the past caries history and roughly the present picture. A saliva specimen is taken to check the lactobaccilus index for every patient and the result is later recorded. On this initial examination by the research team many of the children show the presence of dental caries in varying degrees. This may be due to the neglect either of the parent or the dentist, poor calcification, or to the fact that severe malposition of some

FIGURE 1.

teeth makes good oral hygiene almost impossible.

Where carious teeth are found requiring either restoration or extraction the situation is explained to the parent or guardian. A strong recommendation is made that the family dentist be immediately consulted and, if for some reason this is impossible, arrangements are made for this treatment to be carried out in the Dental Department of the Hospital.

The examining orthodontist also assesses and records the details of the case and works out a tentative treatment plan. The time of initiation of this plan and the details are left to be decided after discussion with all other members of the team and particularly with the plastic surgeon and speech therapist.

When this group consultation has taken place the member of the team acting as chairman of the examining group explains the general plan in lay terms to the parents or guardian so that their approval and co-operation may be obtained.

As you know the dental picture of these children varies considerably with the type and severity of clefting of the lip and palate originally. There are, however, several common characteristics to be found and so an explanation of the general orthodontic treatment plan would, I believe, be better understood if we first review these.

In unilateral palatal cleft cases where the clefting is complete or nearly so there is a gradual medial shifting of the maxilla on the cleft side (Fig. 1).

If there is sufficient overbite and overjet of the maxillary incisors as they erupt the premaxilla will remain in a reasonably normal position.

On the other hand, if this overlapping is insufficient, the premaxilla is rotated by lip musculature and scarring further palatally, until the cleft in the alveolar area is closed.

Where there is a bilateral complete cleft of the hard and soft palates, almost always accompanied by bilateral clefting of the lip, there is a medial collapse of both maxillae until contact is made in the alveolar region with the premaxilla. The premaxilla usually rotates palatally so that the incisors erupting in it are inclined towards tongue and pharynx rather than having the normal labial axial inclination (Fig. 2).

In the deciduous dentition all the teeth, as a rule, are present. The lateral incisor

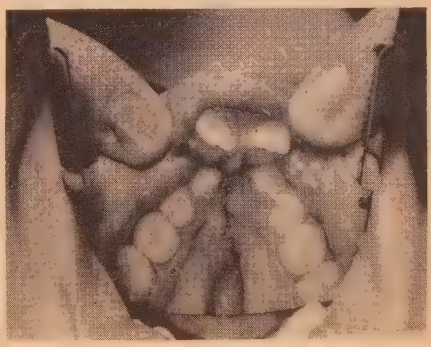


FIGURE 2.

FIGURE 3.

in the cleft region may be anomalous or a supernumerary tooth may be present. The position of this lateral incisor or its eruption direction may be abnormal. Occasionally the central incisor position may also be abnormal. This tooth may rotate considerably due to the tongue or lip effect at eruption or to the abnormal position of the tooth germ. The alveolar process usually is well developed except in the immediate cleft region.

Later the maxillary dental arch is reduced by the cleft width by the lingual displacement of the maxilla on the cleft side. This reduction of the dental arch may be lessened by the presence of a tooth in the cleft region, preventing the fullest displacement of parts. Therefore this tooth in the cleft should never be indiscriminately extracted (Fig. 3).

As the permanent dentition erupts the cleft case looks much less amenable to treatment. The lateral incisor in the cleft region is usually absent. The teeth adjacent to the cleft often erupt towards it and lingually and sometimes are considerably rotated. These teeth also may be hypoplastic.

Further compression of the parts of the alveolar process will result from any reduction in the cleft area due to malposition of teeth, their congenital absence, or careless extraction.

The medial collapse of the segments places the erupting permanent teeth in an abnormal environment over the muscle mass of the tongue with the result that eruption is incomplete and the usual growth in vertical height of the alveolar process is lost. Therefore before correction the child must overclose the mandible in order to have the posterior teeth occlude—with the resultant appearance of an elderly person who has neither teeth nor dentures.

The orthodontic treatment of these children is carried out in the Dental Department of the hosiptal. There is an office, a cephalometric room and two treatment rooms assigned to this work. The orthodontic staff consists of one orthodontist full time, one half-time and four part-time. As well we have available the part-time services of a very able young dentist who attends to all prosthetic requirements. The auxiliary personnel consists of one nurse-secretary for the team, one full-time and one half-time dental assistant and a part-time radiographic technician.

Orthodontic treatment of cleft palate deformities in the past has been considerably limited by the accepted philosophy of treatment. By this concept, arch width has been gained by tooth movement within the alveolar bone of the collapsed maxilla. This has resulted in an improved tooth-to-tooth relationship, but, in its

FIGURE 4.
Appliance with spring.

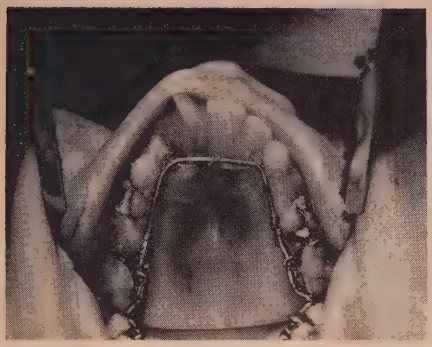


FIGURE 5.
Appliance with 2 springs.

FIGURE 6.
Twin wire appliance and skid to unlock occlusion.

achievement, teeth have been placed in abnormal, unstable positions in relation to their alveolar support.

Dr. Harvold determined from his work that it was possible to correct the narrowed dental arch by repositioning of the displaced parts of the maxilla. He adapted a rather efficient type of orthodontic appliance to bring this about. This appliance is designed to allow free lateral movements of parts divided by the cleft (Figures 4 and 5).

The first phase of the orthodontic treatment plan for almost every case is the repositioning of the maxillary parts, usually through the use of the aforementioned appliance. It has been demonstrated that if this is done in the deciduous dentition or the early mixed dentition that the permanent teeth, then allowed to erupt to their normal level without the interference of the tongue, will stimulate normal development of alveolar bone height in all except the immediate cleft areas. This repositioning of parts at this stage may be accomplished in between three and twelve months. From this point on these segments must be maintained at their new more normal positions throughout life. During the period of dentition exchange this is accomplished by banding the first permanent molars and having a simple soldered fixed lingual wire run around the dental arch at the level of the soft tissue.

When most or all of the permanent teeth have erupted a multiband appliance which allows more complete control of all tooth movements is placed. Using this appliance, the permanent teeth are aligned in the best possible arch form. This second phase of orthodontic treatment may extend from twelve months to thirty-six months (Figures 6 and 7).

Upon completion of this phase, all active orthodontic treatment appliances are removed and replaced by a retaining appliance. This is usually in the form of a small partial denture carrying replacements for the missing tooth or teeth in the cleft area (Figures 8, 9 and 10).

Finally, between the ages of 18 to 21 years a permanent prosthesis, either a fixed bridge or more complex partial denture is fitted to replace the missing tooth or teeth and to maintain the relationship of the separated maxillary parts for life.

This treatment plan as outlined is, of necessity, a very general one but in reality there are, of course, many variations dictated by the individual requirements of the different cases under treatment. The surgeon may aid the orthodontist by freeing a low upper lip attachment. The dentist may place a simple dental plate

FIGURE 7.
Angle Edgewise Multi-Band Appliance.

FIGURE 8.
Same case as number 7 with missing lateral.

to cover a residual palatal opening in order that the speech therapist may make better progress with her treatment. These are only two illustrations of the variations in method and also of the co-operation necessary to the whole habilitation of the child with a cleft lip and palate.

There are at present 210 children receiving orthodontic treatment at the Cleft Palate Clinic with a waiting list of 35 (Feb. '57) who definitely require help. These numbers are both increasing each month. It has been estimated that between 225 and 240 children could be accepted for treatment at one time, with our present physical facilities and staff, and this maximum will be rapidly approached. Of 355 children examined to date 306 have required orthodontic aid.

On the research side of the orthodontic portion of this project there is gradually being accumulated a large volume of very valuable material. All patients treated have full records taken including study casts, intra-oral and cephalometric radiographs, and photographs. These records are being taken at regular intervals so that a cross-section and a serial study may be carried out. The research projects are being carried out using the lateral and antero - posterior cephalometric radiographs. These radiographs are all traced

FIGURE 9.
Same case with lateral on prosthesis.

FIGURE 10.
Same — mirror photo.

FIGURE 11.
A diagram of the tracings of lateral cephalometric radiographs of a typical non-cleft and complete unilateral cleft individuals.

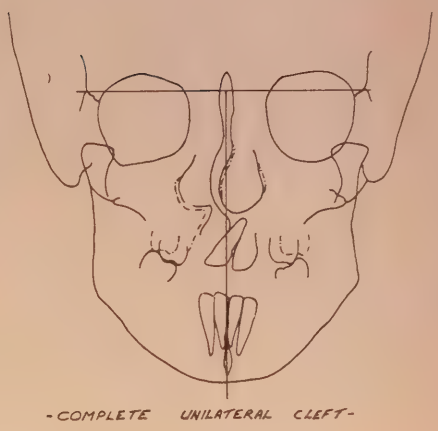


FIGURE 12.
A tracing of the antero-posterior radiograph of a complete unilateral cleft case. The dotted line shows the case after the first stage of expansion.

and measurements are being made which will later be related to those of non-cleft children selected at random from the same population. These non-cleft radiographs are from the excellent material being collected by the Burlington orthodontic research project directed by Dr. Frank Popovich (Figures 11 and 12).

From these tracings measurements are made of the relationships between the dental bases and the face and cranium. Also the tooth position to its base and the bases to each other. All patients, before any orthodontic treatment is instituted, have a completed set of these radiographs made and at least every 12 months thereafter. These studies are of course, incomplete and so we are not ready at this time to publish our findings.

It may be of interest to you to see some slides made of tracings where the patient was making sounds with a radiopaque paste on the tongue and palate when the radiographs were made by way of an ex-

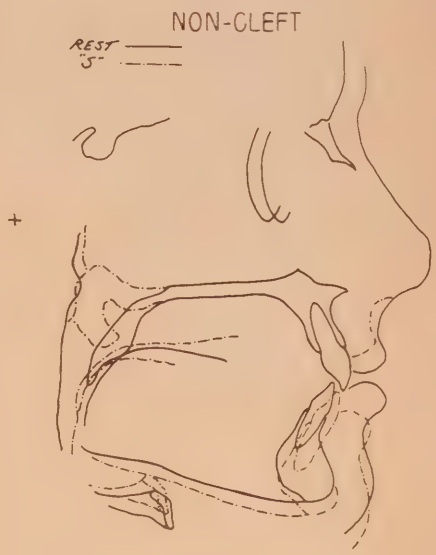


FIGURE 13.

FIGURE 14.

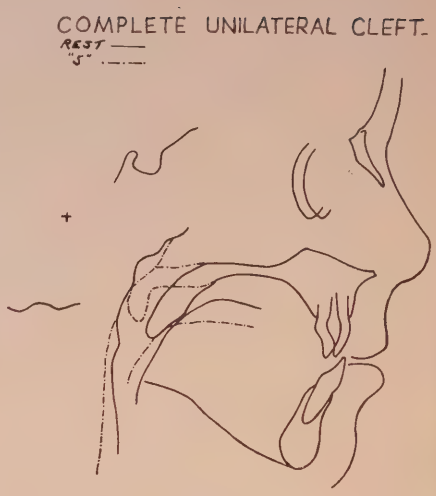


FIGURE 15.

periment with the co-operation of the speech therapists. They show the variation in velo-pharyngeal closure between a non-cleft individual making an "S" sound, a complete unilateral cleft patient, and a patient having a soft palate cleft but poorer closure than the other two (Figures 13, 14 and 15).

This short paper has been presented in an effort to outline for you the activities and problems of the dentists of our team in attempting their part of the habilitation of the unfortunate child born with a cleft lip and/or cleft palate.

There is a gap or at least a lack of effective integration between dentistry and medicine as indicated by the daily mode of practice of a great proportion of physicians and dentists. Neither profession is entirely to blame for this state of affairs since it is largely a product of the separation of the two professions during the period of undergraduate training. Thus neither group becomes fully aware of the biologic problems of the other or knows how to approach their solution when the need for cooperative action becomes evident. Dentistry is trying to correct this situation by offering courses in oral or dental medicine. But the mechanism for effective integration of dental and medical services has not been developed. A new approach based on the concensus of leaders in both professions is needed. For the most effective integration of the two professions and development of a common point of view the educational programmes of each should include a considerable amount of side-by-side training of dental and medical students.

John Oppie McCall, D.D.S., Journal American College of Dentists

Speech Therapy in the Cleft Palate Research and Treatment Centre, Hospital For Sick Children

RUTH LEWIS, M.A., L.C.S.T.

Why the speech of the cleft palate child is affected adversely

Cleft palate children tend to have peculiarly difficult problems in speech. In the first place the physical structure of the organs involving the production of speech are not normal. The surgical repair of the lip, the soft palate and the hard palate may leave conditions that are detrimental to good speech, e.g. short soft palate, muscular weakness of the velum, a narrowed hard palate with possible perforations, a stiff shortened upper lip. The teeth tend to erupt in irregular positions and there is often malocclusion of the teeth. Other factors that may influence the development of speech defects are loss of hearing, also the intelligence may be below par. The personality of the child may affect speech adversely, he may suffer from inferiority feelings because of his handicap. The parental attitude of over-anxiety may contribute to the development of poor speech in the child. It is of great interest to us that a number of cleft palate cases in spite of these difficulties do develop normal speech. 36% of the cases we have examined so far have normal speech. They must have a good ear for sounds and make their own compensations for defective speech. However many of them cannot find their way alone but under careful speech guidance may achieve adequate speech.

How the speech is affected:

One of the outstanding problems of the speech of cleft palate children is nasality. Many of them cannot make the necessary closure between the soft palate and the back wall of the pharynx to prevent escape of air into the nose on the production of all consonants and vowels with the exception of the nasal consonants m, n and ng. Sometimes a muffled tone rather than nasality is produced, due to depression of the nasal passages resulting in lack of nasal resonance.

The sibilant consonants are the most common of sound defects in the cleft palate group. These involve the sounds s, z, sh, zh ch and j or soft g. Different types of lisps may develop—the protrusion lisp, the lateral lisp or the nasal lisp. The plosive consonants are another group affected. Frequently there is insufficient breath pressure in the mouth to produce p, b, t, d, k and hard g adequately. Occasionally practically all the articulation of the consonants is at fault, and the resulting speech is unintelligible.

Treatment of the speech of cleft palate children

The ideal time for direct speech therapy is between the ages of 4 and 8 years. It is of advantage to observe the case earlier, when speech is just developing, as it is possible to see the trends in devia-

tion from the normal pattern of speech at least at the age of three years. Advice to the parents, and demonstration of exercises to stimulate the soft palate and build up breath pressure in the mouth, can be helpful in this early period before direct speech treatment is given.

When the children are first examined in the speech department of the Cleft Palate Research and Treatment Centre, the speech is assessed by an articulation and voice test and a tape recording of the speech is made. The intelligence is assessed and also the personality and emotional behaviour of the child. There is some opportunity to assess parental attitudes and management of the child to note whether it is of any value to give speech instruction to the parents so that they may work with us on the child's speech.

We assume that if the child has the best possible surgery followed by reconstruction of the mouth and teeth by orthodontic treatment or prosthesis, the chance of producing normal speech is greatly enhanced. The defects and bad speech habits already established do not necessarily disappear when the physical structures are improved, but the efficacy of speech therapy should be greatly increased thereby. This assumption has to be proven in our Cleft Palate Research during these five years.

Out of 215 cases recommended for treatment 117 cases are receiving speech therapy at the present time. 36 of this number have been discharged with adequate speech. The cases who live in Toronto and the surrounding area can come once a week for speech therapy. For the out of town cases a compromise has to be made. They receive speech therapy in conjunction with their orthodontic appointments. Occasionally for far distant cases we try to give some instruction by correspondence to an interested teacher or parent.

Tape recordings are made of the speech as training progresses and when the case is ready for discharge a final tape recording of voice and language is made for comparison with the first recording. By these voice recordings we hope to prove that many of these children whose speech was quite inadequate, can be given adequate speech if not completely normal.

From a survey of the literature relating to the medical and public health aspects of fluoridation, there is no scientific evidence to show that the consumption of water to which fluorine has been added to the recommended level will produce either acute or chronic fluoride poisoning.

In so far as allegations have been made that a small proportion of persons may exhibit a personal idiosyncrasy to fluorides, it has not so far been shown that such cases exist. All available evidence therefore suggests that the consumption of fluoridated water will in no way adversely affect the general health of a community consuming it. The contrary is the case, for by substantially reducing the incidence of dental caries, fluoridation, by diminishing the absorption of septic material into the system, can play a vital part in improving the general health of a community.

W. Alcock, M.B., CH.B., D.P.H., M.R.S.H.
Royal Society of Health Journal, July, 1957

ABSTRACTS

Orthodontic Significance of Anomalies of Tooth Eruption

ARTHUR S. ASH, B.S., D.D.S.

Among the factors initiating or complicating malocclusions are anomalies of tooth eruption. Under consideration were (1) the anomalous malposition and retarded eruption of the maxillary permanent central incisor which may follow traumatization and devitalization of the deciduous predecessor and (2) the anomalous retarded, and perhaps ectopic, eruption of the mandibular second premolar associated with overretention of the deciduous second molar.

Thirty-seven cases of anomalous maxillary permanent central incisor eruption were investigated, leading to the conclusions that:

1. Lingual eruption of these teeth was due to the lessened resorptivity of a retained nonvital deciduous tooth.
2. Labial eruption followed early extraction of the nonvital deciduous tooth, eliminating a normal barrier to the usual downward and forward eruptive path of the permanent tooth.
3. Retarded eruption may be the result of the formation of a fibrous tissue at the site of deciduous tooth infection, forming a retarding barrier to eruption.

Overretention of a mandibular second deciduous molar can result in generalized malocclusion where:

1. Excessive tooth structure is present in an arch containing deciduous second molars as well as permanent second molars, causing crowding within the arch or increasing a potential toward a Class III malocclusion.
2. The mandibular second deciduous molars have been retained while the maxillary second deciduous molars have been shed, permitting establishment of a permanent molar cuspal relationship wherein there are forces capable of producing a Class II malocclusion.

In cases where the overretained deciduous molar has been extracted as a preventive measure, the result may be a localized malposition involving an ectopically erupted premolar into a space that:

1. Remained or was maintained oversize, permitting rotation in the absence of proximal contact.
2. Closed excessively, particularly in the presence of an erupted or erupting permanent second molar, causing blocking out of the premolar.

The practising orthodontist, while recognizing the importance of all the aetiologic factors capable of producing malocclusions, is clinically concerned with those which fall within his control. Admitting his limitations, he must accept certain influences, such as the genetic ones, hoping to overcome them through treatment, and he must be on the lookout for others, particularly the local ones, hoping to prevent them through recognition and interception.

Within this frame of reference the ectopic or retarded eruption of certain permanent teeth may be considered as preventable, recognizable symptoms of an orthodontic problem. The anomalous eruption of the maxillary permanent central incisor predictably follows a particular

traumatic experience of its predecessor and that of the mandibular second premolar is demonstrably related to overretention of the deciduous molar. As manifestations of malocclusion, these teeth may constitute the total orthodontic deviation, or they may be a relatively minor aspect of that deviation. In either case, they remain worthy of careful consideration, anticipation, and evaluation, particularly in view of the secondary aetiological effect which they may have upon the occlusion of the entire mouth.

American Journal of Orthodontics
Vol. 43 — No. 8 — August 1957.

The Amalgam Matrix

RICHARD S. YOUNGS, D.D.S.

The two types of matrices are the mechanical matric and the tailor-made matrix. Important in the choice of a matrix retainer and in wedging is the re-examination of the cavity preparation for proper extensions or faults resulting in amalgam excess.

The matrix can be adapted to the gingival cavity wall by the use of a wedge or a wedge in combination with a ligature. The contact area can be established by contouring the matrix band and burnishing the band after the retainer is placed. A proper matrix is easily contoured; allows heavy packing pressures without movement during condensation; supplies the equivalent of the missing wall or walls; prevents amalgam excess from packing beyond the margins, and allows restoration of the contact area without disturbing it in matrix removal.

The Journal of the Michigan State Dental Assoc.
Volume 39, No. 6, June 1957

Rate of Urinary Fluoride Output in Normal Adults

ISADORE ZIPKIN Ph.D. (with the technical assistance of W. A. Lee),
and NICHOLAS C. LEONE, M.D., F.A.P.H.A.

Eight normal adults 26-58 years of age, drinking a municipal water containing 1 ppm. F, served as subjects for the present investigation. At 9.00 a.m. of the control day the bladder was emptied. Two hundred ml of tap water was drunk to insure an adequate urinary output and the urine voided during the next hour was collected. This procedure was repeated at 10.00 a.m., 11.00 a.m., and 12.00 noon, and at 2, 4, 6, 8, and 10 p.m. Two hundred ml of tap water was also drunk at 12 p.m. and the urine voided between 12 midnight and 9.00 a.m. of the next day was collected as a single sample. Next 200 ml of water containing an additional 5 mg F and NaF was drunk; the regimen of the previous control day was repeated; and the study was completed at 9.00 a.m. of the day following the test day. Thus, three hourly urine samples, six two-hour samples, and one overnight sample of

nine hours were obtained from each of the eight subjects during the control and test day. The subject refrained from tea and fish, because of the high fluoride content, and recorded the kind, time and amount of all ad libitum fluid consumption. All fluids exclusive of drinking water were assumed to contain 0.2 ppm F, and the daily diet was estimated to contain 0.3 mg. F.

After 24 hours 65.1 per cent of the fluoride ingested during the control day appeared in the urine, whereas only 54.1 per cent of the intake during the test day was found.

Fluoride was elminated with the greatest rapidity during the first hour after ingestion of a "challenge" dose of 5 mg. F. Thereafter, the rate dropped rapidly for an additional eight hours and then approached the rate of 0.1 mg/hr observed during the control day.

American Journal of Public Health
Volume 47, No. 7, July 1957

Paedodontics—The Field for Interceptive and Preventive Orthodontics

KENNETH E. WESSELS, D.D.S., M.S.

Of all specialities of dentistry, paedodontics should be the best equipped to assist the specialist of orthodontics in interceptive treatment. The paedodontist with an adequate orthodontic background and the opportunity to see and study countless small children, is in position to detect mal-development and to either institute interceptive therapy or to seek consultative assistance from an orthodontic colleague. Many cases of early orthodontic interest are referred to the paedodontist by the general practitioner. These cases often fall into the classification of preventive orthodontics. Some, however, are already candidates for extensive orthodontic therapy. The children's dentist must recognize this and refer such cases to the orthodontist. Because of the great need and demand for orthodontic services, the paedodontist must recognize and do something about interception of malocclusion at a time when the greatest amount of direction can be given with the least amount of effort. Examination is advisable for all children for occlusal disturbances which might promote unsatisfactory patterns of growth. This advice is all too seldom followed. In the dentist's preoccupation with restorative procedures for the teeth, the occlusion is often forgotten.

An entirely new philosophy of treatment must be evolved for the children's dentist. It must be based upon prevention in all its aspects. Preventive orthodontics can, and must, be a most important phase of this philosophy. It must be made a fundamental part of the practice of dentistry for each child. Examination of the child dental patient should include more than a mere tabulation of dental caries. Consideration must be given to growth of the facial structures and occlusion of the teeth prior to the institution of any dental therapy. Treatment of a single tooth must be considered in the light of the entire dentition. All of the aspects of preventive orthodontics must be kept in mind both during examination and therapy. for the child, realizing that a multitude of factors influence the eventual orthodontic status of the individual. Those factors amenable to change, elimination or development, fall in the province of the field of paedodontics.

Journal of Dentistry for Children
Second Quarter 1957

The Responsibility of the Patient in the Treatment of Periodontal Disease

S. R. PARKS, D.D.S.

An unfortunate aspect of periodontal disease is that it is seldom accompanied by pain. Pain is a warning of danger. When the patient is told that he has this disease, sometimes he becomes panicky and often is ready to have some treatment that is foolish or impractical. He must be warned of the many nostrums, medicinal and mechanical.

There are no new, spectacular or dramatic treatment procedures. Subgingival curettage and gingival resection and cooperation of the patient are the foundations in the treatment of periodontal disease.

Penicillin has no place in the treatment of periodontal disease. Excessive splinting is not to be condoned. Gold therapy is seldom indicated, but dentists often use it because their training in dental school was principally mechanical. The quick, mechanical successes achieved in other fields of dentistry will not work in periodontics. The dentist must have patience to wait, for biologic and physiologic responses to periodontal treatment cannot be hurried.

Expensive splinting, except in rare instances seldom is indicated. Splinting functions best in the mouth where the periodontum is normal. A normal mouth should not be treated in any manner.

The Journal of the American Dental Assoc. Volume 55 — No. 2 — August 1957

Responsibilities of the Dentist In Health Service

RONALD E. GOLDSTEIN, Atlanta, Georgia.

There is a definite need for dental health service. A dentist has four major responsibilities in health service; education, prevention, treatment and research. Education includes the undergraduate, the dentist's parents, the public, and other dentists. The public must be informed about the necessity of dental health. There are many aids the dentist can employ in this effort.

One of the responsibilities the dentist has is improving the methods of health service education. Dentists must continue their education after graduation to offer complete dental care. In the community the dentist is the spokesman of public health service.

In prevention the dentist has a continuous responsibility in the fight for universal acceptance of fluoridation. The best preventive measure for periodontal disease is giving proper education to the public.

Treatment includes responsibility to those who can afford health service as well as those who are indigent. This can be done by devoting time to clinics, the public health service, and extension of service in hospitals. A great deal of study and investigation must be devoted to im-

proving the present payment plans.

Not enough research is being conducted because of lack of funds—both private and federal. The dentist has an obligation to press for increased federal support in this great health problem.

In conclusion, dentists should disassociate themselves with the past practice and feeling of "isolationism" and accept their responsibilities to humanity in health service.

Journal American College of Dentists
Volume 24 — No. 2 — June 1957

The Size Relationship Between the Maxillary and Mandibular Anterior Segments of the Dental Arch

CECIL W. NEFF, D.D.S.

Several surveys have determined the size relationship of the anterior teeth. Neff with malocclusions and Lundstrom with random occlusions have found that the six maxillary anterior teeth are larger than the lower six anterior teeth by 18 to 36%. Bolton determined the excellent occlusions have a smaller range, the maxillary anterior teeth being 24 to 34% larger than the lower six anterior teeth.

Relations that indicate reduction in tooth size of the mandibular anterior teeth is necessary occur in approximately ten per cent of malocclusions. It is very rare that reduction in the size of the maxillary anterior teeth is indicated.

Tooth size relation of the anterior segment of the dental arches and the degree of overbite do not bear a consistent relationship in untreated malocclusions and non-orthodontic normals. However, where the orthodontist is in control of the final arrangements of the denture, the relationship is more pronounced.

To determine if the size relation of the teeth in the anterior segments of the dental arches is correctly correlated can be a very simple procedure. The figure 22% can be used as a dividing line between good and questionable relationships. If the maxillary six anterior teeth are 22% or more larger than the lower anterior six teeth, the relation is acceptable if it does not exceed 36%.

If the relationship figure is below 22%, a reduction in the size of the mandibular tooth masses (stripping or an extraction) may be necessary to obtain good anterior occlusion. Stripping can be done even after treatment is completed, but extraction of a lower incisor must be considered with caution.

The Angle Orthodontist
Vol. 27 — No. 3 — July 1957

In applying the prepayment principle to dental care, society faces a new development which demands the type of critical and objective study that should have been, but was not, undertaken early, in the development of Blue Cross and Blue Shield plans. Whether all, a number, or one of the current dental plans will succeed, fall short of the objectives, or collapse, cannot be predicted. Regardless of the outcome, each plan contains a body of experience, and the experience, adequately analyzed, offers a basis for the formulation of professional policy.

S. J. Axelrod, M.D.
Journal of the A.D.A.

EDITORIAL

Dentistry in Residential Areas

The profession has recently become apprised of some legislation which should give cause for serious concern by dentists throughout the country. This legislation, because it is a direct departure from an accepted general principle, may seriously affect the future practice of dentistry in many communities in Canada.

The British North American Act vests legislative authority over property in the Provincial Legislatures. The Legislatures in turn, by means of delegated legislation, confer the right upon a municipality to pass by-laws to the extent permitted by the Legislature. Certain by-laws, however, become law only upon approval of a provincial municipal board which possesses the responsibility of administering the province's municipal act. Occasionally extended periods of time elapse from the moment the by-law has passed the local council until final approval is rendered by the municipal board. This time interval however, does not seem to preclude the local council from enforcing the by-law.

For two years it has been impossible for dentists to locate their offices in a home in any residential area in the Township of Etobicoke, the community immediately to the west of the city of Toronto proper. With its population now in excess of 110,000, this area forms one of the larger municipalities within Metropolitan Toronto. Although the by-law in which this regulation forms a part has not yet been entirely approved by the Ontario Municipal Board, it nevertheless has been in effect in the township since its approval by the Etobicoke Council. The township however, did not tar the medical profession with the same brush.

It has long been an accepted and justifiable exception, coincident with conformity to various building regulations, that physicians' and dentists' offices are no encroachment upon the residential character of a community. In point of fact, as these practices are more often than not of a neighbourhood variety, they serve as a distinct convenience to the public because of facility of access and are looked upon as most desirable assets to any community. Especially in larger metropolitan areas where public transit so seriously lags behind the growth of the communities, there is a significant desire on the part of the public to obtain their dental and medical services in their own immediate areas. This observation can easily be supported by the number of requests which come to the attention of the various licensing bodies. Such a by-law therefore, can only serve to inconvenience the public, and make it more difficult to provide dental service to the township.

Unfortunately, when the by-law was first heard at Municipal Board level the profession was not represented. Legally no excuse exists for this failure to appear but humanly the members of the profession did not observe closely enough, the zoning regulations being proposed.

When a re-hearing was held a few weeks ago, the profession's representative was not allowed to give argument because no observations were made at the hearing some two years previously. The only recourse now is to seek a hearing before the local council and attempt to have the by-law amended. The Ontario Municipal Act gives the right to a petitioner, should he not be heard or should the request be denied, to appeal to the Ontario Municipal Board. Experience indicates however, that it is usually relatively difficult to obtain such an amendment. The situation may be likened to the efforts required for prevention of disease rather than the much greater problems presented by treatment.

The by-law places those dentists already located in dwellings in the township in a somewhat undesirable situation. While they may continue to employ their residences for this legal non-conforming use, they are prevented from ever moving from their present locations to another residence in the township to carry on dental practice irrespective of any personal or family considerations which may be involved. Also should they be unfortunate enough to have their homes damaged in excess of a fifty per cent valuation through some cause beyond their control they will not be allowed to rehabilitate the dwelling for a continuance of the non-conforming use. The dentists are prevented as well from making any alterations to their existing establishments, except in a minor way to render them more convenient or commodious. The addition, for example, of an operating room or laboratory would not likely be considered in this context.

It is not our purpose here to dwell upon the possible detrimental effects to the dental manpower picture in the township. These arguments are only too well realized by the profession. We do wish, however, to make the point that dentists in other communities should be ever on the alert to determine when such prohibitory measures are being considered and, in the event of the development of similar legislation to that discussed, to report the matter to their legal body in order to permit appropriate action.

CORRESPONDENCE

Dear Dr. Dunn:

I do enjoy very much having the opportunity of reviewing the Journal of the Canadian Dental Association as it arrives in the World Health Organization Library.

I was particularly interested in the July 1957 issue in the book review section, and I refer especially to your review of "The American Fluoridation Experiment". I felt that the last paragraph was especially descriptive.

I was also pleased to see that Dr. Mitton was made President of the Ontario Public Health Association. I am sure he will make a very fine president, and I was very pleased to know that he had received this honour.

Carl L. Sebelius, D.D.S.
Dental Health Officer,
World Health Organization.

To the Editor:

Your review of Waldbott and Exner's "book" on fluoridation was excellent!

Sincerely,
A. E. Seyler, Editor,
Journal, American College of Dentists.

BOOK REVIEWS

Oral Diagnosis and Treatment 3rd Edition. Prepared by: Samuel Charles Miller, D.D.S., F.A.C.D., F.A.D.M. Published by: McGraw Hill Co. of Canada Ltd. Pages: 977. Price: $16.80.

The third edition of this outstanding text "Oral Diagnosis and Treatment" has been completely revised from cover to cover. This edition deals more with the fundamentals of diagnosis than previous ones and is very modern and written with simplicity.

Entirely new chapters include "Surgical Management of Oral Disease," "Aetiology of Periodontal Disease", "Partial Denture Design and Planning", and "Diagnosis of Pulp Abnormalities and Their Treatment".

The chapter entitled "Identification Keys as Diagnostic Aids" is of course new and quite unique. These keys may be an adjunct as organized guides toward identification of certain unfamiliar conditions.

"Surgical Management of Oral Disease", is very well presented. This chapter contains outstanding sections on examination of the oral surgery patient, special problems in surgery, surgical procedures on supporting tissues, surgical management of dental infections, cysts of the oral cavity, granulomas and tumours, traumic injuries of the jaws and mouth, and many others.

The chapters on fixed bridgework and partial dentures are very up to date. Not only are the fundamentals of concept and technique reviewed but, also, the careful consideration required in planning, in order that proper selection and design of appliances be carried out.

The chapter on pulp abnormalities is entirely new and very outstanding. The periodontal sections are good and simply written.

The book is generously illustrated and each chapter has an extensive bibliography and list of questions.

This is the outstanding text on oral diagnosis and would make a valuable addition to your library.

H. B. Squires.

The Practice of Dental Public Health — Prepared by: School of Public Health, Ann Arbor, Michigan. Published by: The University of Michigan Publications Distribution Service. Pages: 198. Price: $3.00.

This book contains the proceedings of the fourth workshop on Dental Public Health at the University of Michigan, April 2-6, 1956, and includes the manuscripts for scheduled lectures as well as five reports prepared by the working committees.

The workshop was held at the request of the Dental Health Section of the American Public Health Association. The University of Michigan School of Public Health offered its accommodation and services in collaboration with the School of Dentistry. Members of both staffs contributed to the programme of the workshop. One only has to review the list of consultants to appreciate the fact that the best known leaders in their respective fields were there to teach and lead the discussion group.

While on the inside cover page it states the subject of the workshop to be "Objectives and Evaluation of a State's Dental Program", the name given to the report would seem to be less accurate. Probably, it should be qualified to read, "Some Aspects of the Practice of Dental Public Health." The five broad fields covered are very important but do not cover the whole field of dental public health practice:

Part 1: The Objectives of a Public Dental-Health Program.

Part 2: Indices of Oral Health.

Part 3: Statistical Technics for Securing and Evaluating Dental Data.

Part 4: Terminology in Dental Public Health.

Part 5: Communal Self - Appraisal of Oral Health Conditions.

The changing philosophy in Public Health described in the paper "What is Public-Health Dentistry?" by Dr. Edward McGavran, Director of the School of Hygiene at Chapel Hill, North Carolina—is a classic and presents a real challenge to public health dentists as to their future status on the public health team and a new concept of their

responsibility for dental health services to the community.

Three parts of the workshop were given over to evaluation procedures; indices of oral health; statistical technics for obtaining and interpreting data and two types of plans were suggested in a self-appraisal of oral health conditions by the community. To make either an appraisal of oral health needs or to assess the success of a programme which is planned to meet the need, it is evident that standard statistical procedure must be used. A consideration of the basis for indices of oral health, indicated the need for more knowledge and more specific criteria than we now have. This applied particularly to indices for occlusion and periodontal disease.

Very extensive bibliographies are provided in committee reports throughout.

One committee under the guidance of Dr. George B. Denton, Research Consultant to the American Dental Association, considered scientific terminology associated with the practice of dental public health. In a comparatively new specialty, this report is very timely.

Certainly, dentists who have had public health training and are employed in public health, will find most helpful material in this book.

There is also useful information for the dentist who accepts his responsibility as a professional citizen, for the oral health of the community in which he practises.

G. T. Mitton

Review of Dentistry 2nd Edition. Prepared by: James T. Ginn, B.S., D.D.S. Published by: The C. V. Mosby Co. Pages: 997. Price: $8.00.

This comprehensive volume, first published in 1949 and completely revised in 1956, is the answer to the average dentist's prayer for a ready reference manual — for general information, or for the answer to a particular question. It is not a text book, but rather a wealth of interesting material, well edited and presented; material that the dentist perhaps will have forgotten, or never did assimilate. There is a good balance between technical and physiological aspects.

"Review of Dentistry" is unique in its manner of presentation — a collection of upwards of 7,000 pertinent questions and answers — an average of six or eight related subjects per page. The book can either be opened at a random page for 5 minutes reading, or by taking advantage of a most complete index (almost 100 pages alone), to pursue a particular subject.

Naturally a certain amount of elementary subject material is included, and will be appreciated by the undergraduate. Actually, Review of Dentistry is admirably suited to serve as a general review for the student, or as a reference handbook for the busy practitioner. It should be borne in mind though, that this book is a complete collection of general information, and does not offer exhaustive answers on any particular subject. For example, if one wishes to know more about Bell's Palsy, other than its being a result of injury to the 7th nerve and being manifested by a paralysis of the facial muscles, then this book is not the place to find it.

Highly recommended for dentists old and young!

R. Reid.

A Dentist's Compendium — Prepared by: Stuart Southwood, M.C., F.D.S. Published by: Henry Kimpton, London, Eng. Pages: 87. Price: $1.50 approx.

Here we have a pamphlet containing an experienced British dentist's observations on the conduct of an office, and certain techniques that he has found of value over a lifetime of practice. If it is accepted at face value, it can be appreciated. One does not have to progress beyond page 1 to encounted such a gem as "A dentist should smell of nothing but very expensive soap". Surely this alone is adequate recompense for the moderate cost of the book!

Technical procedures and treatments described here are not likely to impress or find particular favour with North American dentists. The sum of the contents would compare perhaps to that found in any issue of a dental journal. In fairness to the author, it was not intended to be comprehensive in any respect; and is masquerading with its excellent binding and hard cover.

Recommended only for those with a large library.

R. Reid.

COMMITTEES AND COUNCILS

Specialists and Specialization

The Committee on Specialists and Specialization has, during the past year, confined itself to a careful consideration of a resolution adopted by the Board of Governors at the annual meeting held in Banff, Alberta in 1956.

The two principle points of the resolution were—

1) that the number of specialties recognized should be kept to a reasonable limit.

2) that an endeavour be made to secure uniformity in the specialties recognized from province to province.

As a result of this resolution your committee in its report to the Board of Governors in Winnipeg in 1957 presented information explaining the situation as it then existed, regarding the question.

After considerable discussion a resolution was adopted which stated that because of the complexity of the problem and the confusion which seemed to exist as to which specialties were or should be recognized, it was decided that the Association recognize at this time only the specialties of Oral Surgery and Orthodontics. It was further decided that provision be made for a conference to be held within the year of the Committee on Specialists and Specialization, together with such other persons as may be determined by the Executive, to consider the whole question of specialties and their recognition.

M. A. Rogers, Chairman

THE LIBRARY

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

ANDERSON, W. A. D.: Synopsis of pathology. 4th ed. 1957. 829 p. illus.

AUSTIN, K. P., and LIDGE, E. F.: Partial dentures; a practical textbook. 1957. 227 p. illus.

FINN, S. B., and others: Clinical pedodontics. 1957. 664 p. illus.

MONHEIM, L. M.: Local anesthesia and pain control in dental practice. 1957. 300 p. illus.

THE J. M. NEY CO.: Practical application of hydrocolloid for fixed bridgework. 1953. 112 p. illus.

THE J. M. NEY CO.: Planned partials; the combined edition of the Ney Surveyor book, and the Ney Partial Denture book. 1955. 168 p. illus.

THE J. M. NEY CO.: The Ney Chayes Technic; the mechanics of building movable-removable restorations with Ney Chayes attachments. 1955. 60 p. illus.

THE J. M. NEY CO.: Ney bridge and inlay book. 1955. 161 p. illus.

THE J. M. NEY CO.: The Ney gold handbook. 1956. 62 p. illus.

ECONOMIC SECURITY

The Process of Inflation

E. L. R. WILLIAMSON, M.B.E., B.P.A., F.R.Econ.S., Consulting Economist.

The first of the two previous articles discussed the nature of monetary and price inflation; the second adduced the fact that extensive inflation is a reality in Canada, particularly in the last year. Perhaps it is worth noting that in public speeches and press comments the term usually employed is "inflationary pressures" or "increasing danger of inflation". This often creates the impression that while the possibility of inflation exists, Canada has not yet actually experienced it. This is not so: Inflation is inflation, whether it be slight or total; whether it be accomplished slowly over a long period or quickly in a matter of a few months.

The experience of Germany following World War I is universally recognized as the classic example of rapid and total inflation: So rapid that workers were paid daily because the value of their pay would be too greatly depreciated at the end of a week; so complete that the pre-war equivalent of $20,000,000,000.00 Canadian was required in Reichsmarks to send a letter from Germany to Canada. This was a 100% repudiation of all debts contracted in terms of the old currency.

In contrast to the experience of Germany, France has had no brief, spectacular monetary crisis, and the holding and trading of gold has been permitted with a freedom which neither Canada nor America has known since 1933. Nonetheless, the French franc has steadily declined from a pre-world War value of $0.25 (Canadian) to the current quotation of $0.0027: a 98.92% repudiation of debts in terms of pre-war currency.

The German inflation was rapid and uncontrolled; that of France slow and controlled. But the currency repudiation of France has been, in terms of pre-World War I value, almost as complete as that of Germany.

Recently published statistics show that the purchasing power of the Canadian dollar in retail, or consumer trade is 51.5 cents, compared with that of the 1935-39 base period. In terms of wholesale trade, the decline is to 43.8 cents. Compared to Reichsmark or franc, the Canadian dollar is a tower of strength and solidity, but that there has been a very real and very substantial decline in the purchasing power of the Canadian dollar—or that there has been "inflation"—is beyond question. We have had, therefore, a partial repudiation of long-term, fixed indebtedness: money itself, bonds, pensions and annuities, insurance, all forms of debt repayable in money rather than in kind.

It also was noted that the two principal forces causing inflation in Canada have been: first, more than $2,090 millions net capital investment by Americans in the last two years; second, a 21.3% increase in wages and salaries against only 7.0% increase in the physical volume of production. The position of each of these groups who are the driving forces behind inflation is interesting: The American investment is primarily directed toward the ownership of resources and physical plants for their extraction and shipment. Such investments are by no means affected adversely by inflation; rather the opposite: they

not only increase in value as the dollar declines in purchasing power, but their relative attractiveness increases as that of other forms of investment (in terms of fixed dollar indebtedness) declines. Obviously this group has no direct interest in checking inflation, indeed, it is possible to ask the question whether or not these investors have not reached the conclusion that the total indebtedness in terms of American dollars — approximately $700,000,000,000.00 — is unliquidateable, and that much of American investment in tangible Canadian assets (note, NOT Canadian *dollars*) is not in fact a flight from the American dollar.

The interests of the other group sparking inflation—Canadian wage earners—are curiously different. It long has been supposed that wage earners, lacking the means for investment, have little interest in financial stability and tend to enjoy some benefit from the debt repudiation of inflation.

This concept is confirmed by the extent to which organized labour each year automatically demands increased remuneration without reference to increased productivity. But it overlooks labour's vested interest in the vast pension funds which have been built up, especially over the last twenty years. Experts of the International Monetary Fund, examining the world-wide problem of inflation recently expressed the view that the principal cause of inflation at the present time is the ever-recurrent wage increase not matched by equal increase in productivity. If labour's collective savings in pensions and insurance — their other principal avenue of savings — are rendered ineffective by inflation, to what purpose has been so much industrial strife to obtain them?

The final element in creating and maintaining inflation is a psychological one: the idea that comfort and luxury are inherent rights of man, and that work is at least regrettable. These are new concepts in the history of civilized people. The demand for ease as a right keeps demand going on terms whereby we are using up or wasting the accumulated resources of four hundred years of effort.

The consequences of this process will be considered in the next article, but it is clear that if the present process is to be halted, it cannot be left to Government alone. There must be a concerted effort throughout the whole country, and the professions can and should give a strong lead to this end.

THE PROVINCES

British Columbia

Roentgenology Workshop

The Fifth Annual Roentgenology Workshop was held on August 3-4, 1957, at the University of British Columbia, Vancouver, B.C. This group was originally started in San Francisco at the suggestion of Dr. Gordon Fitzgerald with the idea of improving the quality of x-ray work done in dental offices. It has been held twice in San Francisco, once in Portland and once in Seattle. This is the first time it has met in Canada, and to the best of our knowledge it is the first workshop of its kind ever to be held in Canada.

Registered were 64 dentists and one laboratory technician. Two physicians and two physicists took part in the program. Dr. H. M. Worth, formerly with the University of Toronto and Guy's Hospital, London, "headlined" the meeting with these topics: "Benign and Malignant Tumours of the

Jaws" and "Fibrous Dysplasia". Dr. R. W. Boyd, head of the radiology department, Vancouver General Hospital, spoke on "Radiation Hazards and Safety Standards in Medical and Dental Practice". Dr. G. M. Shrum, head of the department of physics, U.B.C., gave "Some Elementary Ideas on Radiation". Dr. E. Dale Trout, consulting physicist with the General Electric Company, Milwaukee, gave a review of the development of equipment for dental radiography.

Members of the group participating in the program were — Dr. F. Lloyd Jacobson, University of Washington — "Oral Roentgenology for Children"; Dr. Theo. S. Grant, University of California — "Interpretation of Coronal Changes"; Dr. Arnold R. Neely, University of Oregon — "Parallel Intra-oral Technique". A self-evaluation quiz by Dr. Fitzgerald ended the first day of the workshop, and a panel discussion on problems in interpretation wound up the program on the second day.

There was some controversy when Dr. Jacobson suggested that dental x-rays should be restricted to the absolute minimum for children. After some discussion on the subject, the general feeling of the meeting seemed to be that provided proper precautions were taken to protect the patient from excess radiation by modern methods, there was no reason to limit the number of films needed for proper diagnosis.

In charge of the workshop this year were Drs. M. J. Waterman, M. P. Warshawski, Orville F. Wright and Edward Slakov, all of Vancouver. The meeting will be held again next year in Seattle, Wash.

D. H. M.

College of Dental Surgeons of B.C.

Elected officers of the Council of the College of Dental Surgeons of British Columbia at the annual meeting in Vancouver recently were:

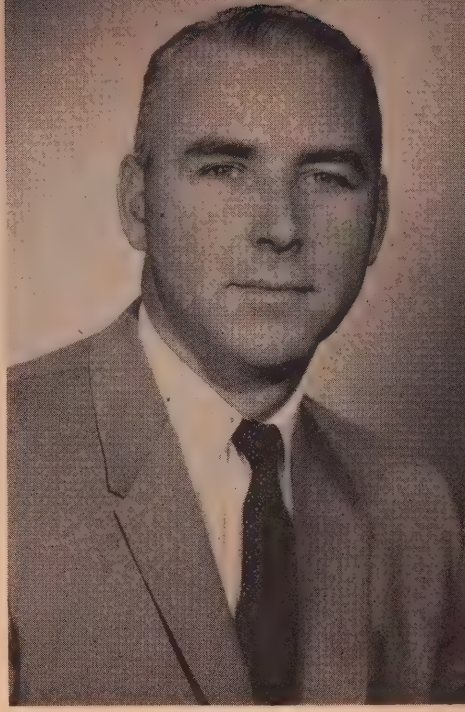
Dr. C. M. Whitworth, president; Dr. C. R. Halman, vice-president; and Dr. G. I. Creasy, registrar, all of Vancouver.

Others elected as members of the council were: Dr. L. B. Alexander, of Honey; Dr. M. J. T. Dohan, of Victoria; Dr. W. Gregorak, of Rossland; Dr. H. J. Hocking, of Prince George; Dr. W. P. Munsie, of Vancouver, and Dr. Charles E. Usher, of Victoria.

Manitoba

Faculty of Dentistry

A long awaited and hoped for dream has finally become a reality for the dental profession in Manitoba. It was made official through the announcement by Dr. H. Saunderson, President of The University of Manitoba, that Dr. John W. Neilson has been appointed the Dean for the new Faculty of Dentistry. This culminates many years of efforts by representatives of the profession to convince our Provincial Government that there was a necessity to provide facilities to teach Manitoba students here at our own university rather than depending on other dental schools. It will be a good many years before the results of establishing this new faculty will be felt, but at least we can now look forward to that day when sufficient new dentists will be graduated yearly to look after most of the Province's dental needs.



DR. JOHN W. NEILSON

The new Dean will be moving to Winnipeg early this fall and will have the twofold task of supervising the construction of the new dental building and at the same time trying to assemble a staff so that the curriculum will be ready when the building is — in the fall of 1958.

The appointment of Dr. Neilson to this all important position was warmly welcomed by the profession here. He is a native of the Canadian prairies and received his dental education at Edmonton, and, as a

Canadian Dental Association Tour Group at Heidelburg Castle. The tour was arranged in conjunction with the International Dental Congress in Rome.

result, knows at first-hand the conditions which may be encountered. He is known personally to many of our men through their association with him, both at school and in the Dental Corps. He has pursued an academic career, which gives him an ideal background to enable him to cope with all the problems which will develop with the founding of a new dental school.

Winnipeg Dental Society

Dr. Walter Grenko was elected president of the Winnipeg Dental Society for 1957-58.

Other officers are Dr. M. J. Averback, vice-president; Dr. J. P. Beattie, clinic chairman; Dr. G. W. Danzinger, secretary treasurer; Dr. W. Gordon Campbell, past president.

Committee members are Drs. G. H. Merkeley, C. D. Rusen, and R. E. Wallace.

Ontario

Northern Ontario Dental Association

Dentists from all parts of Northern Ontario took part in a three day convention held in Timmins from September 6th to 8th. A programme of clinics and sightseeing was organized.

Timmins was chosen by the association for its annual convention in 1957 during the convention last year in Sault Ste. Marie. Dr. S. E. Caverly, president of the N.O.D.A., said that plans were underway to hold the 1958 convention at Kirkland Lake.

Dr. Maxwell Rockman of Toronto conducted a clinic on September 7th on the use of radiology in dental work, and Dr. R. L. Twible, also of Toronto, described the latest methods of prosthodontic replacement of teeth by artificial techniques.

Dentists who arrived on September 6th were taken on a conducted tour underground at the Hollinger. Registration was followed by a reception at the Empire Hotel and a business meeting was held after the clinics on Saturday, from 4.15 to 5 p.m.

The President's Banquet held on Saturday evening, was the climax to the convention and farewell breakfast was served at 10 a.m. Sunday morning.

Wives of local dentists entertained the wives of delegates and a separate programme was prepared for them, including sightseeing in the Porcupine while the clinics were in progress, also a tour underground at Hollinger.

Quebec

Montreal Dental Club

The annual Spring Golf Tournament of the Montreal Dental Club was held on a very pleasant week-end early in June at Knowlton Golf Club in the Eastern Townships.

Once again this proved to be one of the most popular events on the club calendar, and a large group teed off for a wonderful week-end.

The winners were: 1st Low Gross — Dr. A. J. Schutz; 2nd Low Gross — Dr. L. E. Kent Jr.; Dr. E. P. Millar copped low net honors, followed closely by Dr. R. Nadeau for 2nd low net. The putting competition was won by Dr. R. Dohn and the Monkey Golf by Dr. G. Dundass.

Return matches are now being planned for early October when the Fall Tournament is held.

A. J. S.

Impressive Ceremony at Issuing of Licenses

On the first of June, 1957, the College of Dental Surgeons of the Province of Quebec initiated an impressive ceremony in presenting the new graduates in Dentistry with the certificate attesting to their right to practise Dental Surgery in the Province of Quebec.

This ceremony was attended by the governors and their wives, the graduates, and two guests of their choice. The welcoming address was delivered by the President of the College, Dr. V. Dube, and Dr. J. M. Chamard spoke to the graduates in English.

Each graduate, in turn, advanced to the front, took his oath of office, and signed this oath before receiving his certificate from the President.

THE CORPS

Promotions

Major C. M. Cornish — Army Headquarters has announced the promotion of Major C. M. Cornish to the rank of Lt.-Col. September 1, 1957. Lt.-Col. Cornish was born in Ingersoll, Ont., on January 29, 1917. He attended Ingersoll Collegiate and St. Andrews College in Ingersoll, Ont.; attended the University of Toronto, graduating in 1942. Enlisting in 1942, he served for 10 months in the United Kingdom. Lt.-Col. Cornish has just completed two years with 2nd Canadian Infantry Brigade in Germany. He assumes the appointment of Senior Operator No. 13 Dental Coy., R.C.D.C. He will be employed in the dental clinic at A.F.H.Q. in Ottawa.

Major R. B. Jackson — Army Headquarters has announced the promotion of Major R. B. Jackson to the rank of Lt.-Col. September 1, 1957. Lt.-Col. Jackson was born in Winnipeg, Manitoba on April 12, 1919. He attended school in Winnipeg and the University of Toronto, graduating in 1943, and was appointed to the Canadian Army (Active) in March, 1943. Lt.-Col. Jackson will assume the appointment of D.D.D.S. in the Branch of the Adjutant-General (Director General of Dental Services) effective September 1, 1957.

Courses

Major D. H. Hillier has been selected to attend a course at the U.S. Naval Dental School, Bethesda, Md. Major Hillier was born in Toronto, Ont., on March 30, 1917. He attended Parkdale Collegiate and the University of Toronto, graduating in 1945 with a B.A., and D.D.S. He is married with four children. He is currently employed in Camp Borden, Ont.

Major G. C. Evans of the R.C.D.C. School attended a two day course at the Ticonium Division of Consolidated Metal Products, Albany, N.Y.

Major G. MacDougall is attending a course at the Walter Reed Army Institute of Research, Walter Reed Medical Center, Washington, D.C. Major MacDougall was born in Sherbrooke, P.Q. He attended Bishops College and McGill University, graduating in 1945.

Appointments

Dr. J. V. P. Chatwin has been re-appointed to the R.C.D.C. in the rank of Captain. Dr. Chatwin has been practising in Petrolia, Ont. He attended the University of Alberta, graduating in 1951. He is married with three children.

Releases

Capt. G. N. Truscott, who recently completed a tour of duty with 35 Field Dental Unit, France, has been released. Capt. Truscott graduated from McGill University in 1952 and was appointed to the R.C.D.C. the same year. Capt. Truscott will take up practice in Ottawa.

Capt. R. J. Dufresne has been released. Capt. Dufresne graduated from the University of Montreal in 1953. He is married with two children. He will practise in Chicoutimi, P.Q.

GENERAL NEWS

UN Body Finds Fluoridation Safe, Effective.

The UN World Health Organization said recently that the use of fluoridated drinking water to prevent tooth decay was safe, effective and practical.

After studying hundreds of water fluoridation programmes in 17 countries, an expert committee of the UN health agency in Geneva reported that water fluoridation was approved by responsible public health officials throughout the world.

In the United States 32,000,000 persons in more than 1,500 communities are drinking fluoridated water and 16 other countries have already begun similar programmes, the agency found.

Results in all nations using fluoridated drinking water show a remarkable uniformity, the committee said. Dental caries in the permanent teeth of children decreased 60 per cent, while in children's primary teeth the reduction ranges from 50 to 60 per cent.

Furthermore, children who had benefited from fluoridated water had well formed teeth which were described by the expert committee as more resistant to caries than the teeth of other children.

Without any qualifications or cautions, the World Health Organization recommended the use of fluoridated drinking water whenever and wherever possible.

While the cost of adding fluorine to public drinking water is now reasonable, it may be reduced by recent research developments, the committee said.

IN MEMORIAM

Jacob Grant Countryman — Dr. Jacob Grant Countryman of Hamilton, Ontario, died suddenly at his residence on August 10th.

Dr. Countryman was born in 1894 at North Winchester, Ontario, and he received his early education in Morrisburg Collegiate. He received his B.A. at Queen's University in 1915 and in 1920 he graduated from the Royal College of Dental Surgeons. From 1920-1924 he was Director Dental Services, Saskatoon. In 1948 he was president of the Hamilton Dental Association.

Dr. Countryman was a keen golfer and was also active in all athletic activities, especially track and field during his undergraduate years. In 1921 he was intercollegiate pole vaulting champion, and was manager of the Toronto Dentists' Hockey Team.

He was a member and elder of the Zion United Church and active also in Masonic circles. He was junior warden of the Lodge of Strict Observance, No. 27 AF and AM, a member of the Scottish Rite, Rose Croix Chapter, and he was also a Shriner (Rameses Temple, Toronto).

Surviving are his wife, Vera, one brother, Gordon, of South Porcupine; two sisters, Mrs. D. Forbes, of Massena, N.Y., and Mrs. B. Storring of Tamworth, Ontario.

William Craven Macartney — Dr. William Craven Macartney of Ottawa, died on August 31st, 1957, following a heart seizure.

Dr. Macartney was born in December, 1875, at Hawthorne, Ontario, and received his early education at Hawthorne, and at Lisgar Collegiate, Ottawa. He graduated from the R.C.D.S. in 1905 and practised in Ottawa.

He was an Honorary Member of the R.C.D.S. since 1955, and also held the offices of Past President of the Ottawa Dental Society and the Eastern Ontario Dental Association.

Dr. Macartney was a member of the Board of Governors of Carleton College; past chairman of the Board of Stewards of St. James United Church; past master of Doric Lodge, AF and AM; President of Kiwanis Club, 1928; Globe Curling Club, 1930-31; Ottawa Tennis Bowling Club, 1929-30. Public Offices held were — Member of Collegiate Institute Board, 1930-40, and Chairman of Board of Education, Ottawa, 1944.

Surviving are his wife, Mary, three sons, Dr. Elwin S., and Winston, both of Ottawa, and Harry of St. Catharines; three brothers, George, Allen, and Dr. Stuart of Castor, Alberta; one sister and four grandchildren.

Charles Beresford Wilson — Dr. Charles Beresford Wilson died on September 1st at Oshawa General Hospital.

Dr. Wilson was born in 1895 and received his early education in Wardsville, Ontario. He graduated from the Royal College of Dental Surgeons in 1921 and practised in Toronto. Dr. Wilson retired from active practice in 1951 due to poor health.

He is survived by his sister, Lillian, and a brother, Dr. Harry Wilson of Cooksville.

P. L. Neiley — Dr. P. L. Neiley, the head of Canada's armed services dental corps during the First World War, died in Camp Hill Hospital, in August, 1957.

Dr. Neiley was a graduate of Baltimore School of Dentistry, and went to New Glasgow to practise. A native of Kingston, N.S., he had gone into the army from New Glasgow. After his war service he continued to practise for the benefit of army men at Camp Hill before returning to New Glasgow to pick up his practice again.

In the early days of the war he was assigned the job of setting up the dental corps when it became apparent one was needed. He attained the rank of lieutenant colonel.

He is survived by his wife, Thelma, two daughters, Helen Ann and Peggy, also a brother and two sisters.

John Clifford Trainor — Dr. John Clifford Trainor of Pugwash, Nova Scotia, died in August, 1957, following several weeks of illness.

Dr. Trainor was born in Kinkora, P.E.I. He graduated from Dalhousie University Dental School in 1924, and practised for several years in St. Martins. During World War I he served with the 105th Battalion Infantry Division.

He was well known for his active participation in community affairs. He served as a zone commander for the Cape Breton region of the Canadian Legion and area supervisor for the Ground Observer Corps of the R.C.A.F., and was a captain in the Reserve Army. Dr. Trainor was a former president of the Board of Trade, was twice mayor, and served several terms on the town council. He was also a member of the executive of the Antigonish-Guysboro-Richmond-Inverness Development Association and the Port Hawkesbury Area Cancer Unit.

Frederick James MacLean — Lt. Col. Frederick MacLean died suddenly on August 11th, at Westminster Hospital, London, Ontario.

Lt. Col. MacLean was born in New Glasgow, N.S., and lived in North Battleford and Prince Albert, Saskatchewan, before enlisting in the First World War. After the war he graduated from the University of Toronto Dental School and returned to the West to enter private practice. He re-entered the army in 1939 when the Second World War broke out. He retired and went to live in London, Ont., just three months before his death.

Surviving are his wife, Vera, a daughter, Mrs. W. Shulz of Sarnia, three sons, Lennox A., and Douglas of London, and Garry of Montreal; one sister, Mrs. A. J. Campbell, and two grandchildren.

Henri-Louis Fortin — Dr. Henri-Louis Fortin of Montreal died in August, 1957, at the age of 64.

Dr. Fortin was the son of the former Dean of the Faculty of Dentistry, University of Montreal. He had been in practice since 1916 and during the First World War was a captain in the Dental Corps.

He is survived by his wife, Yvonne, and his three children, Helene, Paul, and Pauline.

Charles Contant — Dr. Charles Contant of St. Jerome died in August, 1957, following a long illness. He was 61 years of age.

Dr. Contant had practised dentistry for more than 25 years.

He is survived by his wife, Lauraine.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th — 8th
1959	Halifax, Nova Scotia	June 21st — 24th
1960	Ottawa, Ontario	Sept. 25th — 28th
1961	Saskatoon, Saskatchewan	June 25th — 28th
1967	Toronto, Ontario *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Oct. 21, 1957	Toronto Academy of Dentistry Annual Dinner	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Oct. 23-25, 1957	Thirty-third Annual Fall Clinic	Montreal, P.Q.	Dr. D. B. Ward, Chairman	Fall Clinic, 1414 Drummond St., Suite 309, Montreal, Que.
Oct. 31-Nov. 2nd, 1957	American Academy of Periodontology Annual Meeting	Hotel Di Lido, Miami Beach, Florida	Dr. H. A. Hartman	Chairman Pub. Comm., 4187 Pearl Road, Cleveland 9, Ohio
Nov. 1-2, 1957	American Academy Gold Foil Operators	Miami, Florida	Capt. R. B. Wolcott	Navy Dent. Tech. School, Naval Training Center, San Diego, Calif.
Nov. 4-7, 1957	Annual Session American Dental Association	Miami, Florida	Dr. Harold Hillenbrand, Secretary	222 East Superior St. Chicago 11, Illinois
Nov. 28, 1957	Toronto Academy of Dentistry Winter Clinic	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow	2298 Yonge Street, Toronto, Ont.
Dec. 9-13, 1957	Greater New York Dental Meeting	Hotel Statler, New York	Dr. C. A. LaBorne, Sec.-Treas.	Hotel Statler, Room 106A.
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	298 Yonge Street, Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge Street, Toronto, Ont.

SHORT GRADUATE COURSES

UNIVERSITY OF TORONTO, Faculty of Dentistry

Radiodontics—November 4-8, 1957—Enrolment Limit 10. Fee $100.00—In charge—Dr. M. N. Rockman.

Endodontics—December 2-6, 1957—Enrolment Limit 8. Fee $100.00—In charge—Dr. G. C. Hare.

Orthodontics—Mar. 10-14, 1958—Enrolment Limit 12. Fee $100.00—In charge—Dr. D. G. Woodside.

Dental Oral Surgery and Anaesthesia—April 21-25, 1958—Enrolment Limit 12. Fee $100.00—In charge Dr. J. H. Johnson.

Please address enquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ontario.

TUFTS UNIVERSITY — School of Dental Medicine

Refresher Courses:
1. Oral Medicine—Nov. 25-27, 1957
2. Full Denture Implants—Jan. 6-10, 1958
3. Occlusal Equilibration—Feb. 10-12, 1958
4. Periodontology—Apr. 14-18, 1958.

For further information and application write to: Director of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 136 Harrison Ave., Boston, Massachusetts.

RESEARCH FELLOWSHIPS AVAILABLE

Tufts University School of Dental Medicine announces Two Research Fellowships in Oral Pathology and Periodontology

Two fellowships intended for graduate dentists interested in research and teaching careers in oral pathology and periodontology are now available. In addition to participation in an extensive research program, the fellowships offer training in oral pathology in a laboratory with an active biopsy diagnostic service, and an opportunity for preparing for advanced degrees. There is an annual stipend of $5,000 and the fellowships are renewable.

Additional information may be obtained from Dr. Irving Glickman, Department of Oral Pathology and Periodontology.

Volume 23
Numéro 10
octobre 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Activités de la Ligue d'Hygiène Dentaire de la Province de Québec*

par GABRIEL LORD, D.D.S., Montréal

Je suis très heureux de cette occasion pour vous entretenir d'hygiène dentaire et des activités de la Ligue d'Hygiène Dentaire de la Province de Québec, que j'ai l'honneur de présider.

Avant de vous en faire un très bref historique et de vous dire en quoi exactement consistent ses activités qui, contrairement à ce que l'on pourrait croire, parce que son siège est à Montréal, ne se limitent pas au district métropolitain mais s'étendent à toute la province, avant de vous faire part, dis-je, de ses développements et aussi de ses projets, je voudrais très succinctement vous exposer les principes sur lesquels est basée l'action de notre Ligue.

Un individu en santé parfaite doit avoir une bouche saine, bien que trop peu de personnes se soucient de suivre un régime de vie susceptible de les en doter, attendent aussi trop tard presque toujours pour recourir à des traitements cependant indispensables, — et c'est le cas chez les adultes comme chez les enfants.

Il faut reconnaître que les infections latentes dans la bouche de la population canadienne constituent encore un problème très grave.

C'est pourquoi, nous sommes d'accord en disant qu'il faut, pour combattre cet état de choses, si dangereux, répandre l'éducation dentaire, mener une propagande aussi incessante en faveur de l'hygiène dentaire.

Hygiène dentaire et hygiène alimentaire se marient étroitement, car chez l'enfant en particulier les affections dentaires proviennent en grande partie d'une alimentation défectueuse autant que de mauvaises habitudes.

Et ce sont ces principes qui ont régi la vie de la Ligue d'Hygiène Dentaire de la Province de Québec Incorporée, avant elle, de la Commission d'Hygiène Dentaire du Collège des Chirurgiens Dentistes de la Province de Québec.

* Conférence prononcée le 26 mai 1957 au Congrès de l'Association Dentaire de la Province de Québec, tenu à Sherbrooke.

La Ligue d'Hygiène Dentaire est donc née du désir de la profession dentaire toute entière de promouvoir l'hygiène et la prévention des maladies dentaires. Il y a près de quarante ans déjà que notre Collège se rendait compte de l'immense problème qui, dans ce domaine, se présentait à lui, d'un côté, alors que de l'autre il se trouvait en face d'une ignorance presque complète de notre population des moyens de prévention, qui permettraient d'obtenir des dents saines et de les conserver résistantes et en bonne santé.

Durant près de vingt ans, notre Collège ne cessait pas de multiplier les efforts dans ce sens et de parler, de faire parler d'hygiène dentaire et malgré bien des difficultés financières et autres, l'idée peu à peu faisait son chemin de la nécessité de l'enseignement de l'hygiène dentaire.

C'est le 10 juin 1939 que fut réellement conçu le programme nouveau qui allait être réalisé par le Collège et qui était l'embryon de ce qu'est aujourd'hui la Ligue d'Hygiène Dentaire de la Province de Québec.

C'est en effet le 10 juin 1939, que notre excellent confrère, le docteur Jean Brault, de St-Lambert, présentait à des "Journées Dentaires" une causerie sur l'hygiène dentaire. C'était tout un programme qu'en résumé il soumettait ainsi à ses confrères.

En 1940, il était nommé membre de la Commission d'Hygiène Dentaire du Collège, dont il convoquait bientôt une première réunion.

De cette réunion du début découlèrent les réalisations qui se concrétisèrent en octobre 1942, par l'instauration, sous la direction à la fois du docteur Brault, président de la Commission d'Hygiène Dentaire du Collège et de notre aimable confrère le docteur Armand Fortier, président du Collège des Chirurgiens-Dentistes à ce moment d'une active campagne de propagande en faveur de l'hygiène dentaire dans notre Province et en particulier d'une Semaine d'Hygiène Dentaire pour commencer à Montréal même. C'est là l'origine de l'enseignement suivi de l'hygiène dentaire dans notre Province et nous devons en demeurer reconnaissants aux deux instigateurs du début.

Après une série de manifestations visuelles qui se déroulèrent à Montréal, puis dans d'autres villes de la Province, à Valleyfield et Ormstown, sous la direction du docteur Aberdeen McCabe, membre depuis le début, ainsi que moi-même, de la Commission d'Hygiène Dentaire fondée par le Collège, la Commission entreprit un travail régulier d'éducation.

De nombreuses causeries furent données à la radio, au poste CBF de Radio-Canada, aussi bien en français qu'en anglais. Le docteur Ernest Charron nous avait obtenu ces facilités qui furent précieuses à l'époque, puis des articles furent régulièrement, dès 1942, adressés à tous les journaux quotidiens hebdomadaires, à toutes les revues hebdomadaires, bimensuelles, mensuelles, de notre Province, aussi bien de langue anglaise que de langue française. Les journaux anglophones n'ayant montré aucun désir de les publier, tandis que les journaux de langue française les accueillaient très bien, nous avons continué à ceux-là seulement leur envoi régulièrement chaque semaine, envoi qui n'a jamais cessé depuis 1942, c'est-à-dire depuis bientôt 15 ans.

Dès cette année 1942 également, la Commission d'Hygiène Dentaire du Collegè assumait, en collaboration avec le Service de Santé de la Ville de Montréal, dont le directeur, le docteur Adélard Groulx devait plus tard devenir l'un des présidents d'honneur de notre Ligue, une campagne en faveur de l'hygiène dentaire et de l'hygiène alimentaire dans toutes les écoles, pensions, collèges, couvents, maisons d'enseignement de toutes sortes de la grande ville de Montréal.

Grâce au dévouement du docteur Groulx et de ses collaborateurs, cette campagne n'a jamais cessé depuis lors et depuis quinze ans, durant toute l'année scolaire, le représentant de la Ligue par-

courait les écoles avec un médecin du Service de Santé et cette propagande se poursuit auprès de la population écolière et des maîtres aussi, religieux et laiques, masculins et féminins de Montréal.

Après avoir duré un certain temps sur les ondes de Radio-Canada, les causeries de la Ligue furent données il y a tantôt 12 ans, au Poste CKAC de La Presse. Je suis heureux d'avoir pu depuis lors les y maintenir à titre complèment gracieux, à raison de deux causeries de cinq minutes par semaine et là encore sans aucune interruption.

A la fin de chacune de ces causeries à la radio, comme dans chacun des articles qui paraissent dans plus de cent cinquante périodiques de langue française de notre Province chaque semaine, il est offert aux auditrices, aux auditeurs, aux lecteurs, aux lectrices, de répondre aux questions qu'ils voudront bien poser. Et cela vaut à la Ligue, mes chers confrères, plus de huit mille lettres par année, auxquelles il est toujours très vite répondu, aussi explicitement que possible, dans un sens général bien entendu, et avec toujours la recommandation formelle d'aller au plus tôt consulter le dentiste.

Par ces articles dans les journaux, par ces causeries à la radio, par ces lettres adressées personnellement à de jeunes mamans, la Commission d'Hygiène Dentaire, puis la Ligue d'Hygiène Dentaire, ont conscience d'avoir bien servi l'intérêt de la population et de la profession.

C'est en 1945 que la Commission d'Hygiène Dentaire du Collège des Chirurgiens-Dentistes de la Province se transformait en ligue indépendante, sous le nom de Ligue d'Hygiène Dentaire de la Province de Québec Incorporée.

En tant que Commission, notre mouvement avait déjà reçu d'assez généreux octrois du gouvernement provincial, en tant que Ligue elle continua à être subventionnée, et même un peu plus largement, par le gouvernement de la Province.

La profession entière doit en remercier les présidents du Collège de l'époque, dont les confrères Armand Fortier, Albert Surprenant, Conrad Archambault, Ephrem Vinet, qui surent toujours faire les démarches voulues pour être ainsi soutenus par les pouvoirs publics et même obtenir du Collège lui-même une aide très précieuse, ne ménageant pour tout cela ni leur temps ni leur peine.

Avec très peu de moyens financiers à sa disposition, notre Commission, puis notre Ligue surent durant de longes années, grâce au travail inlassable et désintéressé et au dévouement de certains d'entre nous et de ses collaborateurs, accomplir une oeuvre fort utile.

Mais c'est en 1954, avec le concours des Docteurs Ephrem Vinet, Albert Surprenant, Conrad Archambault, Armand Fortier et de quelques autres confrères, et l'appui complet du Collège des Chirurgiens-Dentistes de la Province de Québec, que la Ligue, grâce à de généreux octrois fédéraux-provinciaux, a réalisé le projet formé par elle depuis longtemps d'envoyer aux études cinq de nos confrères, choisis par le conseil de la Ligue et agréés par le Collège, puis, lorsqu'ils furent qualifiés dentistes hygiénistes par l'obtention de leur diplôme à l'Université de Montréal, de les engager à titre de propagandiste de l'hygiène dentaire à travers la Province.

Je signale en passant que ces cinq dentistes sont désormais six, car un sixième vient de nous être accordé et qui est déjà nommé. Je me fais un plaisir de vous donner les noms, que vous connaissez bien, de ces dentistes hygiénistes de la Ligue d'Hygiène Dentaire, les docteurs Aberdeen McCabe, Yves Lafleur, Amherst Hébert, Guy Boisclair, Gustave Rochon et enfin Léo Ratelle.

C'est depuis le 1er septembre 1955 que la Ligue est entrée réellement dans la nouvelle phase de ses activités.

La prévention de la carie dentaire doit se faire chez les tout jeunes enfants. La formation de l'émail des dents est déjà avancée ches l'enfant naissant et celui des dents permanentes est complètement formé vers l'âge de six à huit ans. Le travail de prévention est donc la responsabilité de ceux qui ont la charge de

jeunes enfants, c'est-à-dire des mères de famille, des instituteurs et institutrices, religieux et laiques, des garde-malades.

Donc, pour que son travail soit efficace, l'hygiène dentaire, les dentistes hygiénistes de la Ligue doivent s'adresser de préférences à ces adultes.

C'est ainsi que le but que s'est donné la Ligue est de convaincre les adultes qui ont la responsabilité de jeunes enfants, de la nécessité de la prévention des maladies dentaires et de leur enseigner les moyens les plus simples et les plus efficaces de la réaliser.

Dans leur enseignement, ces dentistes hygiénistes de la Ligue s'adressent de préférence aux garde-malades dans les trente et quelques écoles d'infirmières de langue française de la Province de Québec, aux instituteurs et institutrices dans les différentes Commissions scolaires, aux futures institutrices et futures instituteurs, religieux et laiques, dans les écoles normales et les Instituts familiaux, aux mères de famille par tous les moyens possibles, par le truchement de conférences dans les Cercles féminins de toutes sortes, grâce à ses articles dans les journaux, grâce encore à ses causeries si écoutées à la radio, grâce même à quelques rares apparitions à la télévision.

Les propagandistes de la Ligue, c'est-à-dire ses dentistes hygiénistes, atteignent aussi la classe dirigeante pour obtenir des mesures publiques d'hygiène dentaire par des causeries dans les différents clubs sociaux où ils peuvent se faire inviter et devant les conseils de ville dans un grand nombre déjà de municipalités.

Les dentistes hygiénistes de la Ligue ont mené et continuent à mener depuis septembre 1955 une campagne infiniment active et très documentée, qui s'est révelée jusqu'ici en plusieurs points très fructueuse, en faveur de la fluoration des eaux de consommation.

La Ligue d'Hygiène Dentairs vient de préparer, à la demande de l'Institut Canadien de l'Education des Adultes un rapport très détaillé qui vous donne, mes chers confrères, le détail de toutes ses activités dont je ne fais ici qu'indiquer les grandes lignes.

Ce rapport est à votre disposition et le docteur Ephrem Vinet, administrateur en même temps que secrétaire-trésorier de la Ligue, véritable animateur de ses activités actuelles, se fera un plaiser de vous en remettre un examplaire, si vous voulez bien le lui demander.

Mes chers confrères, je voudrais encore revenir sur un point que j'ai effleuré tout à l'heure quand je vous disais que le travail de la Ligue s'étendait à toute la Province. Théoriquement c'est tout à fait vrai tout d'abord car le but que nous visons est non pas une région mais toutes les région du Québec, c'est strictement vrai déjà, car bien qu'au début seulement des nos nouvelles activités, nous avons très largement dépassé le district métropolitain déjà, c'est-à-dire de Montréal et ses environs.

Le siège social de la Ligue est à Montréal où est attaché également un dentiste hygiéniste, le docteur Amherst Hébert, Le docteur Aberdeen McCabe s'occupe des comtés de Terrebonne, d'Argenteuil, des Deux-Montagnes et déborde même déjà vite au delà. Le docteur Yves Lafleur, rayonne dans la direction de St-Hyacinthe et dans tous les Cantons de l'Est, travaillant beaucoup ici même à Sherbrooke; le docteur Gustave Rochon, centré à Joliette, s'étend jusqu'au delà du fleuve St-Laurent dans le comté de Nicolet et très haut vers les pays du nord; le domaine du docteur Guy Boisclair, enfin, comprend toute la région de Trois-Rivières, englobant aussi toute la haute Mauricie.

Le docteur Léo Ratelle, qui vient d'être nommé dentiste hygiéniste de la Ligue d'Hygiène Dentaire, se voit affecté au district du Saguenay Lac St-Jean. En fin octobre dernier, en effet, le docteur Ephrem Vinet était invité à aller parler devant l'Association Dentaire du Saguenay Lac St-Jean et a étudié avec elle la possibilité de la nomination d'un hygiéniste dentaire dans cette région. Dès le 3 novembre, le docteur Paul Paré, de Jonquières, écrivait au docteur Vinet:

"Votre passage chez nous sera toujours un souvenir heureux puisqu'il marquera le commencement d'une ère nouvelle en ce qui concerne l'hygiène dentaire." Il continuait en disant: "L'enthousiasme des confrères pour les services d'un dentiste hygiéniste ne fait qu'accroftre et nous sommes assurés qu'il trouvera ici un grand esprit de collaboration".

Et c'est ainsi, Messieurs et chers confrères, que le docteur Léo Ratelle va occuper ces fonctions dans le District de Saguenay et du Lac St-Jean, sous les plus heureux auspices.

Du reste, dès le mois de juillet de l'an dernier, après une enquéte faite sur place, à Montréal et dans toute la région, notre confrère le docteur H. K. Brown, consultant en hygiène dentaire au Service de l'Hygiène Dentaire du Ministère de la Santé Nationale et du Bien-Etre Social, à Ottawa, écrivait au docteur Vinet une lettre infiniment élogieuse dont je me plais à vous citer quelques extraits.

Je cite: "La façon dont vous avez organisé votre travail, la somme de travail déjà accomplie, l'intérêt et l'enthousiasme dont fait preuve votre personnel de dentistes d'hygiène publique, m'ont vivement impressionné. A mon avis, vous avez fait un choix judicieux en vous appliquant surtout à renseigner les étudiants d'école normale, les instituteurs, les infirmières étudiantes et diplômées, toutes gens dont les intérêts et les services auront la plus profonde influence sur la manière de voir de la population enfantine, ainsi que sur celle de leurs jeunes parents."

"Vous méritez des félicitations pour avoir acquis pleine reconnaissance de la part des autorités provinciales de l'enseignement et pour avoir obtenu leur permission de poursuivre votre enseignement auprès des instituteurs et des étudiants. Les nombreuses lettres que vous avez reçues des principaux et des directeurs de diverses institutions, lettres dans lesquelles on félicite votre personnel de la qualité des cours qu'ils ont donnés, tout en demandant de poursuivre ces mêmes cours, démontrent bien qu'on reconnaît en haut lieu l'opportunité de ces cours et la compétence de vos dentistes d'hygiène publique en cette matière."

"Le travail accompli en vue de convaincre les autorités municipales et autres groupes connexes de fluorer les eaux d'aqueduc public a été de très haute qualité. J'ai fort apprécié d'avoir l'occasion d'entendre des transcriptions des causeries données à ces groupes. Elles étaient excellentes. Le grand nombre de conseils municipaux qui ont adopté des résolutions en faveur de la fluoration de l'eau témoigne de l'efficacité des faits et des arguments mis en lumière par votre personnel."

"Je tiens à vous assurer de l'intérêt sympathique que je porte à votre travail et de mon désir de collaborer avec vous de toute façon."

Ces mots, si expressifs par eux mêmes et sous la signature du docteur Brown, se passent de tous commentaires.

Mais la Ligue ne considère pas encore que sa tâche soit achevée, bien loin de là, elle ne fait que commencer et même son organisation ne fait aussi que débuter.

Le 24 avril, c'est-à-dire il y a à peine un mois, le docteur Vinet écrivait au docteur Brown en lui demandant d'abord la nomination du docteur Léo Ratelle, qui a été accordée presqu'immédiatement, et en lui exposant aussi un autre projet que voici: et je cite les termes exacts de la lettre du docteur Vinet:

"Il y a encore dans la province de Québec des régions infininment intéressantes pour l'oeuvre que nous poursuivons et où nous voudrions vivement exercer nos activitiés. Ce sont les villes de Québec et de Levis, la Beauce et le bas du fleuve, ainsi qu'au nord de la Province de Québec, l'Abitibi. En vue de réaliser ce project, dont l'urgence se fait sentir, nous avons l'intention de vous demander dans un avenir très prochain, l'octroi de deux nouvelles bourses d'étude en vue de faire qualifier en hygiène dentaire publique deux autres chirurgiens-dentistes choisis par nous, qui exerceront leurs fonctions dans les régions que je viens de vous indiquer."

"J'ai le sentiment que ces deux nomi-

nations supplémentaires nous permettraient de remplir presqu'entièrement notre tâche, le programme que nous nous sommes fixé, et, en vérité, que nous pourrions ainsi rendre à toute la population les services les plus précieux en hygiène dentaire."

"A ce moment, nous serons en effet en mesure d'enseigner les éléments essentiels de l'hygiène dentaire aux grands élèves de toutes les écoles normales, religieuses, laiques, de filles et de garçons, à tous ceux des maisons de formation pédagogique des diverses communautés d'hommes et de femmes, aux étudiantes des écoles d'infirmière, à celles des Instituts familiaux,—en un mot, à tous ceux et à toutes celles qui auront demain la charge eux-mêmes de l'enseignement et de la formation des jeunes générations."

"C'est l'ambition que nous avons et le but que nous visons est de servir ainsi de notre mieux, de toutes nos forces, l'intérêt public qui ne peut se séparer de la santé dentaire, base de la santé générale."

Et ainsi se termine cette demande du docteur Ephrem Vinet au nom de la Ligue à Ottawa. Souhaitons qu'elle soit entendue avec bienveillance et qu'elle soit exaucée comme le furent celles que précédemment nous lui avons adressées par l'intermédiaire des autorités compétentes de notre Province de Québec dont il faut à ce sujet louer l'esprit de compréhension et de dévouement à la réalisation de nos projets qui se confondent toujours, on l'a bien compris à Québec, avec l'intérêt général le meilleur de notre population toute entière.

Je vous remercie Messieurs de la bonne attention que vous m'avez accordée. Je m'excuse d'avoir été peut-être un peu long, mais je tenais à vous faire bien comprendre et bien saisir ce qu'est la Ligue d'Hygiène Dentaire de la Province de Québec et qu'elle porte bien son nom, car elle est vraiment la Ligue Dentaire non pas d'une région, d'une ville, d'un groupe, mais de toute notre profession dans et pour toute la Province.

Relations de l'articulé avec la stabilité des pièces complètes

par PIERRE-YVES LAMARCHE B.A., D.D.S., Montréal

(suite)

Le montage des dents

Avant d'étudier le montage des dents proprement dit, il serait indiqué, je crois, de mentionner quelques notions générales sur le choix des dents.

Il existe une grande variété de dents dont les formes s'adaptent, à différents degrés, aux besoins fonctionnels des dentiers. Il est cependant possible de les classifier en trois catégories générales:

1—Les dents de forme anatomique pure.
2—Les dents de forme anatomique modifiée.
3—Les dents de forme non-anatomique ou géométrique.

1— Les dents de forme anatomique pure:

Ces dents sont modelées selon l'anatomie de la dent naturelle. Leurs cuspes sont hauts et elles sont volumineuses, ce qui déjà compromet pour beaucoup la stabilité des pièces, puisque les cuspes dont les plans ont une angulation trop prononcée, donnent naissance à des forces latérales qui tendent à déloger les pièces. De plus, la hauteur et la position de ces cuspes rendent le balancement à peu près

impossible. Pour ces raisons, le dentiste n'aura aucun avantage à se servir de ces dents.

2– Les dents de forme anatomique modifiée:

On a conçu ces dents spécialement en vue de l'articulé. Les cuspes sont d'inclinaison variable, et, ayant l'aspect général de la dent naturelle, leur esthétique est conservée.

Les dents sans cuspe ou d'inclinaison de O degré ont, par le fait même, une interdigitation nulle, et, pour balancer ces dents adéquatement, l'opérateur serait dans l'obligation de donner aux prothèses une trajectoire incisive de O degré également; et l'esthétique de telles prothèses serait profondément compromise, puisque les incisives supérieures seraient trop courtes et celles du bas trop longues.

L'opérateur aura donc avantage à choisir des dents dont l'inclinaison des cuspides sera moyenne, assurant ainsi le balancement des pièces et conservant de plus leur esthétique.

Une dent dépourvue de cuspes semble plus facile à balancer; mais le balancement qu'elle permet est incomplet. En effet, des prothèses fabriquées avec des dents de O degré ne permettront, en propulsion, qu'un seul contact postérieur de chaque côté. (CF. fig. 16.)

Tant qu'à l'efficacité de ces dents, elle est pauvre, puisque la mastication se fait sur des surfaces planes: en conséquence, la mandibule devra multiplier ces mouvements pour effectuer le même travail qu'il est possible de faire avec des dents pourvues de cuspes. Ainsi, le traumatisme causé par la mastication des aliments avec une sans cuspe ou avec cuspe sera vraisemblablement le même.

Les dents de forme anatomique modifiée semblent satisfaire aux exigences du balancement. En effet, en protrusion, il est possible d'avoir plusieurs contacts postérieurs de chaque côté; il en sera de même en latéralité. (Cf. fig. 16) De plus, la forme arrondie des cuspes de ces dents tiendra compte du balancement des mouvements accessoires de la mandibule.

Grâce à l'angulation de leurs cuspes, ces dents pourront s'adapter parfaitement à une trajectoire incisive variable ainsi qu'aux diverses pentes condyliennes rencontrées chez l'édenté.

3– Les dents de forme non-anatomique ou géométrique:

Il est pratiquement impossible de donner une appréciation générale de ces dents puisqu'elles sont conçues d'après des théories actuellement très discutées. Le prothésiste devra juger de ces dents en tenant compte de leur aptitude à s'harmoniser avec l'articulé on vue d'une meilleure stabilité.

Le montage des dents proprement dit

Le montage des dents peut être analysé sous trois aspects différents; d'abord, au point de vue montage en général ou orientation antéro-postérieure et bucco-linguale du plan occlusal des dents, ensuite, le montage au point de vue statique, c'est-à-dire l'occlusion centrique, enfin, au point de vue de la dynamique fonctionnelle, ou balancement de l'articulé.

1– Orientation du plan occlusal:

C'est sur le montage du haut que reposera l'orientation générale de toutes les dents. En montant ces dents, le dentiste devra avoir en vue la stabilité non seulement statique mais aussi fonctionnelle des prothèses.

A– Orientation antéro-postérieure:

Le plan d'occlusion considéré antéro-postérieurement peut être de deux sortes: il peut être soit horizontal ou convexe.

Si ce plan est horizontal, l'interdigitation des cuspes en occlusion centrique stabilisera autant la prothèse du haut que celle du bas, et comme la prothèse du bas a tendance à être plus instable que celle du haut, cette orientation n'est donc pas avantageuse pour la stabilité du bas. De plus, en protrusion, une orientation horizontale ne permettra aucun contact postérieur, ce qui voue les pièces à une profonde instabilité. (Cf. fig. 16)

Si par contre, l'orientation occlusale du montage du haut est convexe ou possède une courbe de compensation, la prothèse

Influence de la courbe de compensation et des cuspes dans la position protrusive.

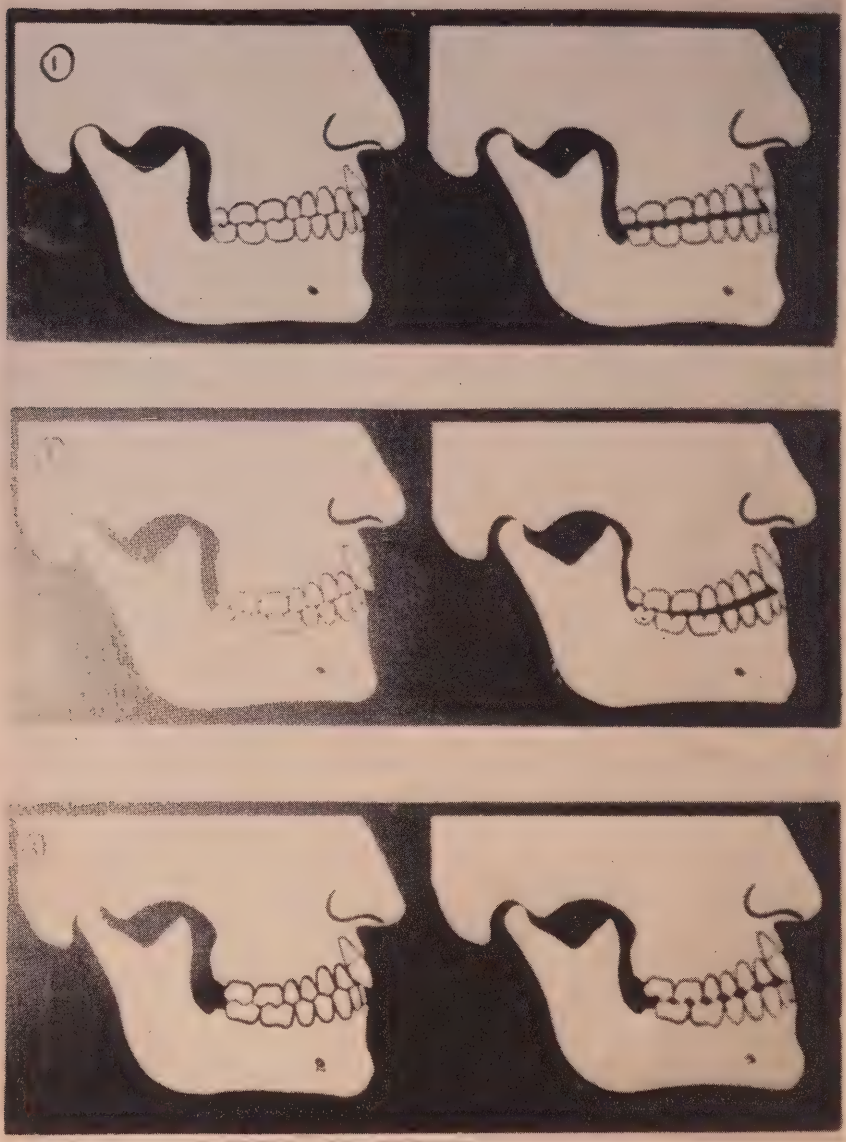


FIG. 16

1. Le dentier n'a pas de courbe de compensation et les dents sont sans cuspes. Aussi nous voyons qu'en protrusion il n'y a de contact que sur les incisives. Des prothèses ainsi montés basculeront chaque fois que la mandibule ira en protrusion.
2. Avec ces dents sans cuspes, la courbe de compensation n'assure de contact que sur les dernières molaires. Sur des prothèses, ceci sera insuffisant pour une bonne stabilité.
3. Ici le dentier, en plus d'avoir une courbe de compensation adéquate, possède des dents avec cuspes. Ainsi les contacts postérieurs seront multipliés assurant une meilleure stabilité des pièces lors des mouvements de protrusion.

du bas se verra beaucoup plus stabilisée et il y aura alors plusieurs contacts postérieurs entre le haut et le bas en propulsion. (Cf. fig. 16)

B– Orientation bucco-linguale:

Il existe sur cette orientation deux écoles qui défendent deux techniques totalement différentes; ces deux techniques sont: les montages monson et anti-monson.

Monson, au cours d'études sur des dentures fortement abrasées d'Esquimaux, découvrit qu'elles présentaient une inclinaison linguale aux mandibules, et buccale aux maxillaires; il a de plus observé que ces inclinaisons étaient tangeantes à une sphère imaginaire dont le diamètre serait de 8 pouces. (Cf. fig. 17)

On en a conclu que c'est selon cette inclinaison que voyage la mandibule en latéralité. C'est sur ce principe que repose la technique du montage Monson.

Ce montage, de prime abord, tend à instabiliser la prothèse du bas à cause de l'inclinaison linguale du plan occlusal, mais ce montage, en rendant possible une

Théorie du "Monson pitch"

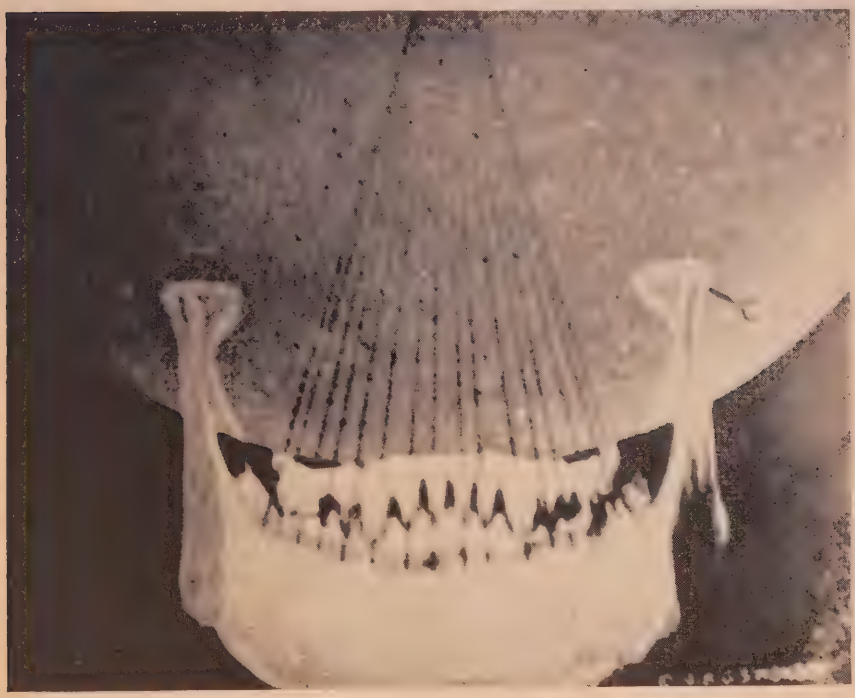


FIG. 17

Tel qu'illustré sur cette photographie, Monson présente une formule par laquelle il établit que si une sphère de 8 pouces de diamètre était posée sur la face occlusale des dents de la mandibule, toutes les surfaces d'occlusion s'appuieraient sur cette sphère. Les condyles feraient également contact avec la sphère.

(Photo tirée du "Journal of Prosthetic Dentistry" No. 2, Page 327, 1952).

articulation bien balancée, stabilise par le fait même la prothèse du bas.

Certains prothésistes ont opposé à cette technique un montage diamétralement différent. Les adeptes de ce montage ont nié que l'on pouvait tirer profit des observations de Monson, puisqu'il s'agissait de dents naturelles soudées en quelque sorte à l'os et où la stabilité n'entrait pas en ligne de compte.

Ces prothésistes ont imaginé une technique qui donne une inclinaison buccale au bas, ce qui stabilise très bien la prothèse du bas en occlusion centrique et en propulsion. Cependant, le balancement en latéralité présente quelques complications, puisque cette orientation semble nullement s'adapter aux plans déterminés par les centres de rotation des mouvements latéraux de la mandibule.

Je crois que le dentiste qui exige une stabilité maximum pour ses prothèses, visera non seulement à stabiliser ses pièces en occlusion centrique, mais surtout lors des mouvements fonctionnels de la mandibule.

Ainsi, à mon avis, le montage qui engendrera la meilleure stabilité quant à l'orientation des plans, sera ce montage pourvu d'une courbe de compensation et d'une inclinaison bucco-linguale selon Monson.

Le montage des dents:

L'aspect du montage des dents qui assure la stabilité des pièces est, selon toute évidence, le balancement de l'articulation. C'est pourquoi, le montage des dents considérera en premier lieu le balancement de l'occlusion centrique puis, le balancement des pièces au cours des mouvements protrusifs et latéraux.

Une articulation sera dite balancée lorsque, au cours des différents mouvements de la mandibule, les prothèses conserveront des contacts de chaque côté simultanément.

Pendant les mouvements fonctionnels de la mandibule, l'occlusion des pièces change continuellement, d'où la difficulté de conserver des contacts uniformes. Ces contacts seront assurés par une orientation adéquate des plans de glissements.

(a) Balancement de l'occlusion centrique.

En occlusion centrique, la stabilité des pièces est assurée par une bonne interdigitation des cuspides d'abord, puis, par la courbe de compensation que l'opérateur aura soin de donner à la prothèse lors du montage des dents.

Sachant que la mandibule passe en occlusion centrique à chaque cycle masticatoire et que plusieurs patients qui portent leurs prothèses pour dormir, demeurent en occlusion centrique pendant une bonne partie de leur sommeil, il est donc facile d'évaluer l'importance d'une occlusion centrique balancée et stabilisée.

Une occlusion centrique balancée n'est pas nécessairement stable, puisque, même si les contacts sont répartis également de part et d'autre de la prothèse, la pression exercée pourra faire bouger la pièce du bas, si la rétention mandibulaire est très pauvre. En effet, l'interdigitation cuspidienne canalise et tend à maintenir l'occlusion; les faces mésiales des cuspides du bas s'appuient sur les faces distales des cuspides du haut produisant une force qui tend à pousser la prothèse du bas vers le fond de la bouche d'une part, d'autre part, les faces distales des cuspides du bas s'appuient sur les faces mésiales des cuspides du haut engendrant une force qui tend à déloger antérieurement la prothèse du bas. En supposant que la résultante de ces forces est nulle, la prothèse du bas aura quand même tendance à être délogée, puisque la mandibule, à l'état de repos, est légèrement en protrusion, et, pour retrouver l'occlusion centrique, les faces distales des cuspides du bas glisseront sur les faces mésiales des cuspides du haut imprimant à la prothèse du bas un mouvement qui tendra à la déloger antérieurement.

Nous rémédierons à ce fait en donnant une courbe de compensation ou de stabilité aux prothèses. Cette courbe fera que la résultante générale des contacts intercuspidiens aura une direction postérieure

qui tendra à stabiliser adéquatement la prothèse du bas.

C'est ainsi qu'il sera possible de stabiliser la prothèse du bas en assurant aux deux pièces prothétiques une bonne interdigitation cuspidienne ainsi qu'une courbe de compensation adéquate.

(b) Balancement de l'occlusion protrusive.

La protrusion mandibulaire est ce mouvement qu'exécute la mandibule pour occuper une position antérieure à celle qu'elle occupe en occlusion centrique tandis que les dentures demeurent en contact.

Le balancement des prothèses au cours des mouvements protrusifs est contrôlé par 5 facteurs. Ce sont:

1–L'inclinaison de la pente condylienne,

2–La courbe de compensation,

3–L'inclinaison du plan d'orientation,

4–L'inclinaison du plan incisif,

5–La hauteur des cuspes.

L'inclinaison de la pente condylienne et la trajectoire incisive sont les facteurs les plus importants. L'inclinaison de la pente condylienne nous est fournie par le patient, et l'opérateur n'en a aucun contrôle. L'inclinaison de l'angle incisif ou guide incisif est déterminée par l'opérateur. C'est à l'aide de ces deux données que sera déterminé le centre de rotation qui règlera le balancement des prothèses pendant les excursions protrusives.

L'opérateur variera les trois autres facteurs en vue d'établir une harmonie entre l'ensemble des 5 facteurs. Cette harmonie sera réalisée lorsque les prothèses conserveront entr'-elles au moins trois contacts de chaque côté lors des mouvements protrusifs.

Pendant la mastication, l'excursion en propulsion sera permise par le glissement des faces mésiales des cuspes des dents inférieures sur les faces distales des cuspes des dents supérieures. Ces faces seront appelées facettes de protrusion.

Pour que les prothèses soient balancées en mouvement protrusif, ces facettes de protrusion devront être tangeantes à des circonférences dont le centre serait déterminé par la rencontre de deux droites perpendiculaires: l'une à la pente incisive, l'autre à la trajectoire condylienne. (Cf. fig. 18)

Ainsi, à mesure qu'une dent s'éloignera du centre de rotation, le rayon du cercle auquel ses facettes de propulsion seront tengeantes, sera d'autant plus grand et l'inclinaison de ces facettes sera diminuée. C'est pourquoi, lors du montage des dents du haut, on pourra augmenter ou diminuer l'inclinaison de ces facettes en augmentant ou diminuant la proéminence de la courbe de compensation.

Si, par contre, l'angulation de ces facettes, pour une raison ou pour une autre, n'obéissait pas à ces règles, il se produirait soit un manque de contact si l'angle de la facette est trop faible, soit un contact prématuré s'il est trop fort. Dans l'un ou l'autre des cas, la stabilité des prothèses sera compromise. De plus, le plan d'orientation pourra influencer l'orientation des facettes de protrusion, puisque en variant l'orientation de ce plan, on éloigne ou rapproche la dent du centre de rotation. (Cf. fig. 18)

La trajectoire condylienne, étant fournie par l'anatomie même du patient, ne peut donc être contrôlée par l'opérateur. Celui-ci n'a donc pas le droit de la modifier et devra la respecter intégralement, sinon, des troubles articulaires suivront.

La trajectoire incisive, cependant, relève presqu'entièrement de l'opérateur. Pour déterminer cette pente, le dentiste toutefois, devra tenir compte des crêtes elles-mêmes, de l'esthétique et de l'interrelation des crêtes entr'elles, c'est-à-dire du degré de leur "overjet" et de leur "overbite". Il aura cependant avantage à choisir une inclinaison la plus faible possible, puisqu'une telle pente tendra à réduire l'inclinaison des cuspes, l'orientation du plan tendra vers l'horizontal et la proéminence de la courbe de compensation sera amoindrie.

Une faible inclinaison de la trajectoire

Facteurs contrôlant la protrusion.

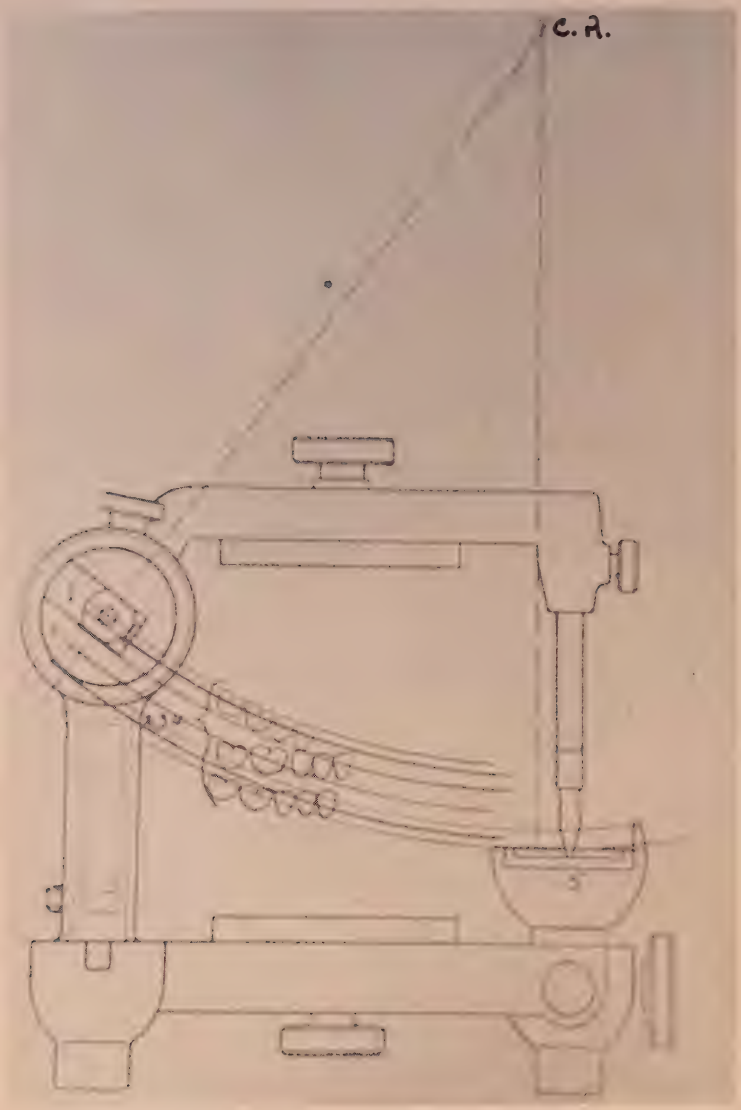


FIG. 18

Cette photographie nous montre comment on peut varier la courbe de compensation, l'inclinaison des cuspides et le plan d'orientation (234) afin d'établir une harmonie entre les cinq facteurs. Il nous est aussi possible de voir comment le centre de rotation (c.r.) est déterminé par la pente condylienne (1), et la trajectoire incisive (5).

incisive, en réduisant l'inclinaison des cuspes, assure une meilleure stabilité, puisqu'une telle inclinaison des facettes de protrusion diminuera de beaucoup l'intensité des forces résultantes latérales qui sont le danger le plus fréquent pour la stabilité des prothèses.

Les autres facteurs de contrôle de la protrusion, quoique traités séparément, sont ajustés simultanément lors du montage des dents.

Pour que les prothèses soient stables en articulation protrusive, il sera nécessaire que les prothèses possèdent des contacts constants des deux côtés simultanément, car, si au cours de ce mouvement, le contact ne se faisait pas sur un côté des pièces, les forces déployées feraient basculer la pièce et la stabilité serait, une fois de plus, compromise.

(c) Balancement des occlusions latérales.

Les prothèses, pour concourir à une meilleure stabilité, devront être balancées non seulement bilatéralement mais aussi si unilatéralement, parce qu'au cours de la mastication, des forces sont appliquées sur le côté travaillant avant même que les dentures soient en contact. A ce moment, il n'existera aucun contact interdentaire pour stabiliser la prothèse du bas.

Pour que la prothèse du bas soit stable, à ce moment, il faudra que d'autres facteurs viennent stabiliser la denture du bas.

(1) Balancement unilatéral.

Les facteurs stabilisant la denture à l'introduction de masses alimentaires entre les dentures, seront, la disposition axiale des dents et la forme de la dent elle-même.

La disposition axiale de la dent.

Les dents postérieures devront être montées de façon à éviter que les forces exercées soient dirigées buccalement. Les dents devront être disposées dans l'axe interalvéolaire. Autrement, si la dent est placée buccalement à cet axe, les forces exercées agiront sur la prothèse du bas comme une force de levier tendant à déloger cette même prothèse, du côté balançant.

Si l'on plaçait les postérieures lingualement à l'axe interalvéolaire, ceci stabiliserait d'avantage la prothèse du bas au point de vue force exercée, mais l'espace réservée à la langue serait réduit; la langue, gênée dans ses mouvements, ferait tôt de déloger la prothèse du bas. (Fig. 1, 2, 3)

L'opérateur aura donc interêt à disposer les dents dans l'axe interalvéolaire.

(b) La forme de la dent.

On pourra diriger l'application des forces lingualement à l'axe interalvéolaire, en choisissant une dent dont la partie linguale sera plus étendue que la partie buccale; ainsi, la majeure partie de la mastication se fera sur cette partie linguale, stabilisant ainsi les prothèses. (Cf. fig. 1)

(2) Balancement bilatéral.

Ce balancement deviendra essentiel à la stabilité des prothèses lorsque les cuspes des dents, ayant transpercé les masses de nourriture, se rejoindront pour terminer la mastication.

A ce moment, l'intensité des forces déployées sera grande et n'agira que sur le côté travaillant. La stabilité de la prothèse du bas ne sera assurée que par la présence de contact du côté balançant. Ces contacts permettront à la prothèse du bas de demeurer sur la crête.

Ce balancement des prothèses en latéralité est contrôlé par cinq facteurs. Ce sont:

1–L'inclinaison du condyle du côté balançant.

2–L'inclinaison des plans de glissement du côté balançant.

3–L'inclinaison des dents du côté balançant.

4–L'inclinaison du plan occlusal du côté balançant.

5–L'inclinaison des plans de glissement du côté travaillant.

La direction que prendra la mandibule dans son excursion latérale sera déterminée par deux facteurs principaux: 1°) l'inclinaison condylienne du côté balançant et non des deux condyles puisqu'à ce moment, le condyle du côté travaillant ne subit qu'une légère rotation; 2°) Le mouvement latéral sera déterminé par l'inclinaison des plans du côté balançant.

A l'aide de ces deux facteurs, nous pourrons établir un centre de rotation déterminé par la rencontre de deux perpendiculaires, l'une élevée sur la trajectoire condylienne du côté balançant, l'autre sera élevée sur le plan lingual de chaque dent du côté travaillant. Les autres facteurs seront manipulés par l'opérateur, en vue d'établir une harmonie entre les cinq facteurs.

Si l'on considère, par exemple, la première molaire de chaque côté de la prothèse, nous pourrons déterminer deux centres de rotation selon que l'un ou l'autre sera le côté travaillant. (Cf. fig. 19)

Ainsi, pour obtenir le balancement en latéralité, les plans buccaux du côté balançant et les plans linguaux du côté travaillant doivent être tangeants à des circonférences ayant leur centre du côté travaillant. Il en sera de même, que ce soit l'un ou l'autre des côtés de la prothèse qui travaille.

De plus, on peut établir des centres de rotation différents pour tous les mouvements intermédiaires entre les mouvements de latéralité et de propulsion.

Il sera cependant très important d'utiliser des dents dont les plans linguaux des cuspes buccaux seront d'inclinaison minimum. Les forces verticales exercées par la mandibule au cours de la mastication engendreront des forces horizontales proportionnelles à l'inclinaison des plans sur lesquels ces forces agissent. En réduisant

Tableau représentant le rôle des différentes lois qui contrôlent le balancement en propulsion et en latéralité.

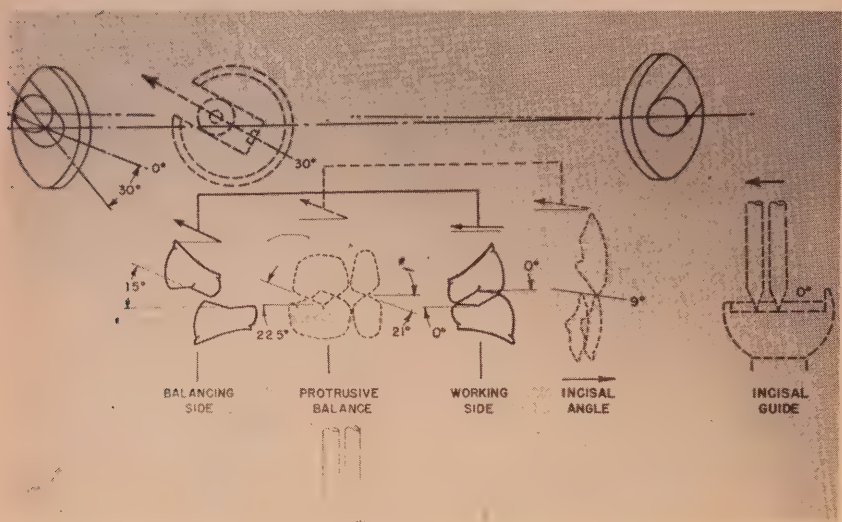


FIG. 20. *Voici une étude comparative.*

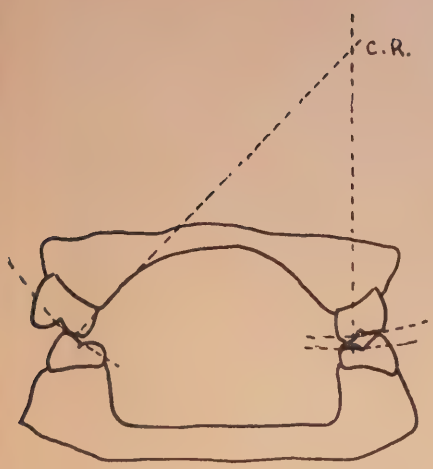


FIG. 19

Voici de quelle manière les centres de rotation sont établis en latéralité.

Il serait possible d'établir un autre centre de rotation si c'était le côté droit qui devenait le côté travaillant.

l'inclinaison de ces plans, nous réduirons par le fait même, l'intensité des résultantes horizontales qui tendent à déloger la prothèse du bas.

Un bon balancement des occlusions latérales est essentiel pour la stabilité des pièces, puisque, comme on le sait, au cours de la mastication, la mandibule voyage beaucoup en latéralité et des forces considérables sont déployées.

Conclusion

Même si les données puisées chez le patient ont été enregistrées exactement, même si l'opérateur a procédé à un montage des dents idéal, même si l'articulation est balancée, le dentiste aura avantage à corriger son balancement dans la bouche même du patient. En effet, l'articulateur, quelle que soit son exactitude, ne peut reproduire exactement le jeu de la mandibule; c'est pour cette raison que lors de la mise en bouche, l'opérateur devra rémédier à certaines petites imperfections de ses prothèses en meulant les contacts prématurés ainsi que les interférences qu'il pourra détecter.

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Principes internationaux d'éthique pour la profession odonto-stomatologique

La F.D.I. s'est préoccupée de ce sujet et son secrétaire-adjoint a présenté un projet qui ne manque pas d'intérêt.

Des principes internationaux ne peuvent être énumérés dans un ensemble de règles déterminées, et par conséquent il n'est pas suggéré que les paragraphes suivants englobent tous les aspects de l'éthique odonto-stomatologique; le praticien dentaire a de nombreux devoirs et obligations en dehors de ceux mentionnés ci-dessous.

L'esprit de ces obligations doit être la gouverne de la conduite de tout homme exerçant une profession libérale.

La base de ces obligations a été résumée de tout temps et pour chacun dans la règle par excellence: "Fais aux autres ce que tu désires que l'on te fasse".

Le praticien dentaire a des obligations envers:

A. Ses patients,

B. Le public en général,

C. Ses confrères,

D. La profession dentaire.

Section A. Le patient.

1. Le bien-être du patient l'emporte sur toute autre considération, et doit être préservé dans la pleine mesure des moyens du praticien.

2. Toute information de caractère personnel mentionnée par le patient, ou apprise à son égard, doit être considérée comme confidentielle. Le praticien dentaire est également tenu de s'assurer que les membres de son personnel suivent la même règle.

3. Le praticien dentaire doit toujours maintenir une situation morale exemplaire et s'assurer qu'à tout moment sa santé morale et corporelle soit en bon état, afin de pouvoir donner à ses patients la clarté de jugement et la compétence qu'ils ont le droit d'exiger.

Section B. Le public en général.

1. Tout praticien dentaire est tenu de maintenir à jour ses connaissances et son habileté professionnelles en poursuivant son éducation pendant la durée de sa carrière professionnelle.

2. Tout praticien dentaire est tenu de donner son appui à toutes mesures prophylactiques prises dans un but d'améliorer la santé du public et en particulier les mesures susceptibles d'améliorer la santé bucco-dentaire de la population.

Section C. Confrères.

1. Le praticien dentaire doit traiter ses confrères comme il désirerait être traité par eux.

2. Le praticien dentaire doit s'abstenir de tout détournement de la clientèle de ses confrères.

3. Dans sa représentation devant ses patients et le public en général, le praticien dentaire est tenu d'employer des moyens et d'agir en conformité avec la dignité de sa profession et d'après les usages et coutumes habituellement en vigueur.

Section D. La profession dentaire.

1. Tout praticien dentaire est tenu de maintenir l'honneur et l'intégrité de sa profession, et sa conduite en tout temps doit tendre à assurer l'honneur et le respect envers lui-même et la profession odonto-stomatologique.

2. Tout praticien dentaire doit montrer envers ceux qui ont contribué à son éducation et à l'art de sa profession, le respect et la gratitude en portant à la connaissance de tous, sans motif de bénéfice personnel, les progrès effectués dans le domaine de la science et de son art, afin de faire bénéficier la profession et le public en général.

Médecine et Hygiène, 30-8-57

Volume 23
Number 11
Toronto
November 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

Dental Epidemiology in Malaya*

Part 1. The Problem and A Programme of Research

F. McCOMBIE**, L.D.S., R.C.S., D.D.P.H.

Dr. Frank McCombie, Director of Preventive Dentistry for the Health Branch of the Government of British Columbia was granted a leave of absence from his post to carry out as a portion of an assignment with the University of Malaya, an epidemiological study of dental conditions in Malaya. This programme was sponsored jointly with the Government of Canada under terms of the Colombo Plan for South and South-east Asia.

Dr. McCombie's report is presented in three parts — (1) The problem and programme of research, (2) A survey of Chinese, Malay and Indian Young Adult Males in Singapore, and (3) A pilot study to estimate the fluoride content of the enamel of the teeth of some Chinese, Malay and Indians resident in Singapore.

Part II and Part III of this general article will appear in the December and January issues, respectively.

EDITOR

Within Malaya and Singapore dental treatment is provided by three distinct groups of personnel, namely Division I dental surgeons, Division II dentists and school dental nurses.

Division I dentists have a registrable qualification which for the majority has been a degree from the University of Malaya. Candidates for the five year course leading to this degree have been required first to pass the University entrance examination. This examination has been based on a course of study extending in all over five terms after the student has passed the School Certificate examination.

During the first year at the University, studies comprise Physics, Chemistry (Inorganic and Organic), Botany, Zoology and Dental Technique. During the final four years of study the curriculum is designed

* Carried out as part of an assignment with the University of Malaya, sponsored jointly with the Government of Canada under terms of the Colombo Plan for South and South-East Asia.

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by the Department of Dentistry which at this time is administered within the Faculty of Medicine. During these four years the long vacations are utilized as additional training periods. The entire course and examinations have attained the official recognition of the General Dental Council of the United Kingdom whereby the B.D.S. degree of the University of Malaya is accepted as a registrable qualification in all countries who accept such recommendations.

The full-time teaching staff of the Department of Dentistry at this time comprises 2 professors, 1 senior lecturer, 8 lecturers and 1 assistant lecturer. In addition part-time assistance is provided by 3 Government dental officers and one R.A.F. specialist dental officer. Higher dental qualifications are held by nine members of the staff. Other members of the Faculty of Medicine assist in the teaching of such subjects as Anatomy, Bacteriology, Medicine, Surgery and Anaesthesia.

Physical facilities of the Dental School permit graduation of 45 students each year which it is hoped will be reached in 1963. At present yearly classes average 23 students.

Division II dentists have received no formal dental education. From 1933 onwards ordinances passed by the respective States of the Federation of Malaya and by Singapore prohibited the practice of Dentistry except by those persons having a registrable qualification, but a number of unqualified dentists were authorized to continue in practice as Division II dentists. During the Japanese occupation 1942-1945, these restrictions were not effectively enforced. In 1948 some 1200 unqualified dentists were practising dentistry in Malaya and Singapore most of whom were not registered. At that time a new ordinance was passed which defined those who were permitted to present themselves for a simple examination. As a result of this examination, approximately one half were admitted to the Dental Register as Division II dentists. The Dental Register is now closed to any further such admissions.

School dental nurses, of whom in Malaya and Singapore there are approximately 80, are required to have passed School Certificate before commencing their two years' training at the Dental Nurses' Training School located in the General Hospital, Penang. In addition to the dental officer acting as Principal of this school the staff includes a further full-time dental officer, two dental sister tutors, two part-time dental officers and four part-time medical specalists. Owing to physical limitations of accommodation a maximum of 15 students may be graduated each year. It is reported that plans are completed and approved for a new school to be built in Kuala Lumpur which will be capable of graduating 50 dental nurses each year.

During the course of training, after instruction in the basic sciences, clinical instruction is confined to amalgam restorations, extraction of deciduous teeth and topical fluoride applications. In addition a considerable part of the curriculum is devoted to dental health education.

After graduation and during a further probationary period of one year and four months all treatment carried out by school nurses is under the direct personal supervision of a dental officer. In fact at this time it is stated that approximately 60% of all the dental nurses in Malaya are located within clinics in which a dental officer is in charge. The remainder are located at smaller clinics, regularly visited by a dental officer who is required to plan all treatment, inspect all cases after completion of the treatment prescribed and carry out for these patients such treatments as are beyond the training of the school dental nurses. In such cases supervision and assistance by the dental officer is estimated at approximately one half day each week per nurse. It is planned that each dental officer will not be responsible for the supervision of more than five school dental nurses.

Within the schools where dental nurses are located they are accepted as members

of the school staff and provide to the teaching staff dental health reference material, information and teaching aids. However they themselves in addition demonstrate in the class rooms tooth brushing drill.

School dental nurses are estimated to provide regular dental care on a six monthly recall basis to a group of between 400 and 600 primary school children. However, within the schools of Malaya there are today approximately 1,200,000 children and it has been estimated that as yet, only one-fifth are receiving regular dental treatment.

The Federation of Malaya with a population[1] of 7,516,000 was reported[2] as having 93 Div. I Dentists and 503 Div. II Dentists at 1 January 1956; a ratio of one dentist per 12,611 population. At the same date the Colony of Singapore with a population[1] of approximately 1,264,000 was reported[3] as having 93 Div. I dentists and 250 Div. II dentists; a ratio of one dentist per 3,912 population.

The population of Singapore is expanding, it is estimated, at approximately 3% per annum[4] i.e. at this time by some 35,000 persons annually. Therefore to maintain even the present ratio of dentists to population, without considering annual loss to the profession by death or retirement, Singapore alone will require 9 new dentists annually. If the population of the Federation is expanding similarly, to maintain even their meagre ratio of dentists to population — dentists there being more than three times as scarce — a further 18 new dentists each year will be required. The total graduated during the academic year 1955-56 in the University of Malaya[5] was 13.

The ratio of dentists to population in Malaya & Singapore is approximately 1 dentist to every 9,350 persons. In Canada with a ratio of dentists to population of approximately 1:2,800 and with the incidence of dental disease there occurring, it has been repeatedly demonstrated that only between one quarter and one third of the population receive dental care each year[6].

Furthermore, it was considered not unlikely that the prevalence and incidence of dental caries in Malaya and Singapore is greater than in Canada. A group of 7 year-old Malaysian children in Singapore are reported[7] as having in 1955 an average of 3.6 D.M.F. teeth and similar Chinese children an average of 4.2 D.M.F. teeth. In Malacca the same study reports a group of Malaysian children as having an average of 2.1 D.M.F. teeth and the Chinese children 4.0. A survey carried out in British Columbia, Canada, in 1955 reported[8] that amongst those 7 year-old children there was an average of 2.5 D.M.F. teeth. Prior to the studies to be subsequently reported, there was no direct evidence available regarding rates of other dental disorders in Singapore or Malaya. However, clinical impressions were that they were of a high magnitude.

Therefore, it appeared likely that there exists in Singapore and Malaya a most serious problem. On the one hand is noted an acute shortage of available dental services (including private practitioner services) and on the other hand it seemed probable that there exists a high rate of prevalence of dental disease.

The problem facing Dentistry in Malaya, as elsewhere, is how best to plan towards reducing the present high level of incidence of dental disease, not only dental caries, and also how to expand and more efficiently utilize available and future dental services to the level whereby all dental disease that occurs throughout the entire population may at some time, in the future, be adequately treated.

It is of course not disputed that at this time in any country the equalization of the need for and the availability of dental services for the complete population has the appearance of Utopia. Nevertheless there is no doubt whatsoever that this is the goal towards which Dentistry must strive.

Research Programme

Therefore it has been suggested that a proposed programme of research to be undertaken by the Department of Den-

tistry of the Universty of Malaya should include three major fields of activity. Firstly, it has been agreed that there should be carried out surveys to determine the prevalence and distribution of the major dental disorders for the population of Singapore and perhaps later of Malaya. Secondly, it has been recommended that endeavour should be made to increase the knowledge of the aetiology of these disorders, with specific reference to their occurence in South-East Asia. Thirdly, to assist in the future elimination of untreated dental disease and abnormalities, it has been recommended that research should not only be directed towards the development of appropriate preventive measures but also further research to determine how existing and future dental services (including those of the private practitioners) may be developed to provide the maximum of effective and efficient dental treatment to the population.

It is perhaps fortunate that there are within the population of Singapore three distinct major racial groups, namely Chinese, Malaysians, and those originating from India and Pakistan. For the purpose of these studies Malaysians are considered to be those people of Malay ancestry either of Malaya or Indonesia and are referred to as Malays, whilst Indians and Pakistanis are considered as being of those families having at some time emigrated from the sub-continent of India but not including Ceylon.

Clinical observations of those with many years of experience in Malaya[9] have led to the belief that there exists considerable differences of prevalence of various dental disorders between these three major racial groups. The prevalence of dental caries has been stated to be highest amongst the Chinese population of Singapore and Malaya, not so high amongst the Malays and lowest amongst the Indians, and that many Indians have an apparent immunity to dental caries. It has also been suggested that some Chinese immigrants to Singapore with an apparent previous caries immunity become prone to dental caries after a few years' residence. In addition it has been stated that there is a low incidence of dental caries amongst the rural Malay communities of the Federation of Malaya. Regarding periodontal disease it is believed that there is a higher prevalence amongst the Indians than the other racial groups.

It will of course be realized that in many other fields of public health most important information regarding the prevalence of disease and its pattern of distribution within the total population has been derived by the calculation of annual age specific death rates for various causes of death derived from the compulsory reporting of deaths and their causes, also the annual incidences of certain diseases have been established by the compulsory reporting of certain types of communicable disease.

Therefore in the field of dental public health the first step of a research programme is to establish on a statistical basis a method to determine, within the total population and the racial groups thereof, the pattern of distribution of dental disease and abnormalities.

Since the population of Singapore includes a significant percentage of immigrants (1954 estimate 27%) it was also planned to investigate whether or not there were any differences within the racial groups between the prevalence rates of dental disorders for the immigrants and for those persons locally born, i.e. in Malaya or Singapore.

Population Groups

To report with any accuracy on the prevalence or incidence of any condition occurring within a total population, necessitates either an examination of every member of the population or that a completely unbiased sample of the total population be selected and examined. It is axiomatic that if a sample be taken, all persons of the total population must have an equal chance of being selected into such a sample.

To apply such principles of random

sampling to the total population of Singapore and/or the Federation of Malaya is not practicable. The only time a reasonably complete list of residents is compiled is at the time of a census and such information rapidly becomes out of date. An alternative procedure used in national or community surveys is to select a sample from a complete list of household dwellings. No such list is available for Singapore and the difficulties in compiling such a list were described in the report[10] on the Social Survey of Singapore, 1953-54. Furthermore, even if the selection of a sample by either of the above means were practicable, unless a very high percentage of those persons selected, agreed to be dentally examined, the results could not be considered representative of the total population. Moreover there are rather obvious practical difficulties to carrying out dental examinations for such a sample.

Other methods of selection of population groups were therefore investigated. Firstly was considered the possibility of an unbiased random sample of a specific group of the total population or segment thereof.

School Pupils

This method could well be applied to the school children, although it is appreciated that the results thereof will be only valid for the school population and not necessarily for the total population of children since attendance at school is not compulsory. Moreover, amongst the younger children in the schools their representation of the total children of their age, it is believed, is greater than amongst the older children. Nevertheless, it has been estimated that the school children of Singapore likely represent approximately 80% of the total child population of the age group 6 - 16 years. Of all schools in Singapore those schools classified as "Registered" had as at October 1956 a total of 237,405 children which was 97% of the total number of children in all Singapore schools.

Therefore it has been suggested that there be selected from the Singapore Registered Schools a total random sample of 3,000 children. This sample would include a total of 1,000 children of each of the three larger racial groups and be equally subdivided between each of the ages 7, 9, 11, 13 and 15 years. Details of a suggested sampling procedure to provide an unbiased random sample of the total population of the registered schools has been prepared[11].

Results of such a dental survey amongst the school pupils of Singapore would provide not only valuable epidemiological data for the younger age groups but also accurate information for the planning of the future expansion of the School Dental Services and be invaluable in providing base-line data for the future evaluation of the effectiveness of these services[13]. It is hoped that this survey will be carried out in the near future.

National Servicemen

To find a group of adults in any way representative of the total population is not easy. However by the process by which trainees for national service have been selected, these trainees make a reasonable but somewhat biased sample of the total young male adult population of a narrow age group. It is to be explained that the process of selection of such trainees[14] was that firstly in early 1954 all 18, 19 and 20 year-old males in Singapore were required to register. The 19 year-olds were medically examined and some were thereby rejected and others were considered unfit for training on account of failing to meet the required educational standards. To select those required for training a public ballot was held and the first intake commenced training in July 1954 and several further intakes have since been arranged. National Servicemen have been detailed for training either with the Singapore Military Forces or the Civil Defence Corps.

Since all National Servicemen now under training were aged 19 years during the early months of 1954, highly accurate information should result from such a

survey but for a very narrow age group. If differences in prevalence rates of dental caries exist between the three racial groups, these should be clearly demonstrated, although perhaps for periodontal lesions and attrition the age of these men may be too low to demonstrate differences possibly occuring in later years. However, since it was reported that the vast majority of the National Servicemen are locally born, it was likely that the number of immigrants within this study would be insufficient to draw any conclusions as to differences which might exist between these two groups.

This survey has been completed and will be reported in a subsequent publication.

Hospital Servants

The numbers required for a survey of an adequate sample size of the adult population in Singapore is estimated at a total of 4,800 subjects, preferably all of one sex, equally divided between the three larger racial groups and equally divided between locally born and "immigrant". To find such a number of subjects and persons who could be considered likely as being representative of the total population and as a single administrative unit, has not been possible.

However, within the four larger hospitals of Singapore are over 1,400 male hospital servants, and of whom the distribution between the three major racial groups is fairly evenly divided.

Hospital servants are reported as receiving $(M)127.00 — $(M)145.00 per month. The Social Survey of Singapore (1953-54) reported the average income per employee as $(M)135.00 per month.[10]

Hospital servants are encouraged to seek dental treatment and certain treatment is available to them at the Dental Clinic of the General Hospital. However, such treatment will not affect the evidence of caries prevalence, but might possibly (though not likely) affect an apparent lowered prevalence of periodontal disease than would be found in the general population.

Such a survey should establish prevalence rates of some of the major dental disorders for a not entirely typical group of the adult population of Singapore. Differences (if such exist) between prevalence rates of the three racial groups should be possible of demonstration and also differences (if they exist) within racial groups between those subjects classified as "locally born" and those as "immigrant". Correlations should be possible of investigation between the major dental disorders and possible associated factors in a selected adult population.

This survey has been completed and the results will be subsequently published.

For the purpose of the present studies the three population groups described above were considered those which it would be most fruitful to survey at this time.

Method of Survey

A method has been prepared and published[11] so that standardized procedures may be carried out now and in the future amongst any population group and so that on all occasions the results from the various studies should be comparable.

These procedures have been designed by following five basic principles:—

1. The maximum possible number of observations have been made entirely objective, i.e. the condition to be recorded is quite definite, either present or absent. Whenever there is any room for diagnostic variation by the examiner, a simple definition of the condition to be observed has been described within the recording instructions made available to the individual examiners. For recording the subjects' oral hygiene practices, sets of cards have been prepared in the different vernacular scripts and of a series the subject is instructed to select the card which best describes what he does most often. By this method bias possibly introduced by a questionnaire and especially liable to be introduced by verbal questioning is eliminated. Furthermore, since a widespread programme of dental health education has not, as yet, been developed in Singapore, it was hoped that the subjects would report the oral hygiene practices they were in fact carrying out and not those practices which

they had learnt they should be performing.

2. By the use of multiple examiners diagnostic bias within a single study and between studies now and in the future, can, it is believed, be reduced to a practical minimum. For all studies a minimum of 12 and preferably 16 examiners has been recommended.
3. To attain the maximum of information within the minimum of examining time a dental survey form was designed taking into account a logical examination sequence and the various prevalence and attack rates which, it was believed, it would be fruitful to investigate.
4. The dental survey form was prepared so that the information thereon recorded can be readily transferred to mechanical punch card equipment, thereby reducing to a minimum the time required by those persons responsible for computing, tabulating and arraying the results of the surveys.
5. By the application of statistical principles of sampling the total number of examinations required to be carried out within a large population group will be reduced to a minimum. However, when only a sample of the total population group is examined, the results from such a sample may not necessarily be precisely true for the whole group. Therefore there will be incorporated within the results a measure of the degree of reliability of these findings, i.e. a statistically calculated "margin of error" of the results.

It was of course appreciated that if these surveys substantiate any of the clinical impressions referred to above, then this information will be invaluable to provide a basis for further studies to elucidate the causes of such differences. Furthermore, such future investigation, it is to be hoped, will also lead to further knowledge of the aetiology of these conditions, especially in S.E. Asia, and thereby lead to the development of appropriate methods of prevention.

Recording of Observations

Information to be recorded on the survey form is divided under seven major headings — classification of subject, prevalence of dental caries, oral hygiene, evidence of betel chewing, prevalence of attrition, prevalence of periodontal disease and malocclusion.

The survey form is of the check off type requiring a definite answer to each question. Failure to answer any question is assumed to be a non-response, rather than a negative response for tabulation purposes.

Precise recording instructions are to be issued[11] to all examining teams.

Carious teeth are to include arrested caries and those teeth in which the point of a No. 9 Ash explorer sticks and resists withdrawal, or in which softness is palpable. Interproximal edges or roughness capable of holding this explorer point are to be recorded as caries, but hard stained enamel imperfections, incipient caries, doubtful cavities or fissures in which the probe just sticks, are not to be recorded as carious teeth.

Teeth with artificial crowns or abutments for bridges are to be recorded as "restored", in spite of the fact that not infrequently gold shell crowns and "bridges" are inserted by the unqualified dentists of Singapore, solely for alleged cosmetic reasons. Teeth previously restored but exhibiting dental caries are to be recorded as carious.

For the ages 5 to 11 years deciduous teeth are designated which are to be considered as prematurely lost if not present. For permanent teeth third molars are to be considered as "missing" if not present at the age of 25 years or more and a space exists for their presence.

Instead of the often used intermediate classification between "missing" and "carious" teeth, namely "teeth to be extracted", a classification of "crowns destroyed" is utilized as being more objective. By the recording instructions such teeth are to include those of which the crowns are destroyed by caries so that the gingival third or less remains or related to which an abscess (chronic or acute) can be observed. Such teeth are of course not included within the totals of those scored as "carious" nor of those scored as "missing".

Poor oral hygiene is to be considered to be demonstrated if material alba (not including calculus) is present on the gin-

gival third of more than one incisal tooth.

The average attrition score is to be determined by first examining each molar tooth and allocating to it a score:— 0 for no sign of attrition, 1 if one or more shiny facet on the enamel is observed, 2, for the evidence of exposed dentine on the occlusal surface, 3 if the raised cusps are eliminated, i.e. the occlusal surface is essentially horizontal and 4 if the maximum height of the crown above the amelo-cemental junction on the buccal aspect is reduced to 3 mm. or less. The sum of these scores for the subject is then to be divided by the number of molar teeth present.

The method of classifying and recording the presence or absence of periodontal disease is that evolved by A. L. Russell[15].

For recording malocclusions the recording instructions specify objective observations to be noted except only in the case of "orthodontic classification" where diagnostic guidance has been provided. An attempt has been made so that by subsequent analysis of the results it may be possible to differentiate those subjects considered to be suffering from "serious" malocclusion.

All examinations to be carried out during the day are to be performed immediately in front of a window with bright natural light. For examinations held in the evenings standard dental unit operating lights will be used. Explorers are to be discarded after a maximum of 20 examinations. Plain mirrors are to be employed and graduated periodontal probes supplied. A chip bower and gauze are to be provided to each examiner.

Statistical Methods

Since the data obtained from these surveys will be based on population samples, rather than an entire population, means and percentages to be shown in the results can be considered only as estimates of the true population figures. The degree of reliability of these sample data can be computed, and this will be done to assist in the correct evaluation of the results.

For each percentage computed, the statistical measure known as the "Standard Error of Estimate of the Percentage" will be calculated and reported. In addition for each mean or average reported will be calculated and reported the "Standard Error of the Mean."

It can be shown by statistical theory that there is only a 5% chance that the true percentage or mean applicable to the entire population lies beyond a range of twice the standard error on either side of the estimate derived from the sample. Further, there is only a 1% chance that the true percentage or mean lies beyond a range of about 2½ times the standard error around the sample estimate. Those ranges are referred to as the 5% and 1% levels of significance and the latter will be used when discussing the results of these surveys.

Another statistical measure allows study of two rates respecting comparable data, and to determine whether the difference between them is likely significant or more likely due to chance alone. This measure is known as the "Standard Error of the Difference" and will be calculated when two rates are compared. If the difference between the two rates is greater than 2.5 times the standard error of the difference between the two rates, the difference is significant at the 1% level of significance. If the difference between the two rates is less than two standard errors of difference between the two rates, the difference is not considered as significant. If the difference between two rates is greater than 2.0 but less than 2.5 standard errors of the difference between the two rates, the difference is significant at the 5% level of significance and for the purpose of these surveys will be considered as of doubtful significance. In such cases additional data will be required before such differences can be accepted or rejected as significant.

The possible association between various observed conditions and possible associated factors will be investigated and tested by the application of the Chi-square test. This test determines whether or not an association, when observed, is likely

or unlikely to be the result of chance. The Chi-square test determines for the association a level of significance or the probability (P) of the play of chance. Thus if the test shows the value of (P) to be 0.2, then this is interpreted that 20% of the time or once in five times this association would be produced by chance—not a very high level of significance. However, if the value of (P) is demonstrated at 0.05 or less but greater than 0.01, then the association is considered significant at the 5% level of confidence, and is usually accepted as "significant." If the value of (P) is demonstrated at 0.01 or less, then the association is considered significant at the 1% level of significance and is usually accepted as being "highly significant."

However, a significant association between two observations does not necessarily imply and certainly does not prove cause and effect. The association might be due to a third unobserved factor. Nevertheless, this is not to be interpreted that the discovery of a significant association is valueless. Rather, it is to be understood that such associations must be interpreted wth considerable care and they may also provide invaluable guidance for further research.

Future Research

The foregoing is known as retrospective epidemiological research and may perhaps reveal significant associations between some of the major dental disorders and possible specific aetiological factors. This information would profitably be supplemented by a knowledge of the dietary pattern of the groups under observation and also knowledge of the biochemical content (including certain trace elements) of such diets.

The next phase in a research programme is known as prospective epidemiological research when by planning controlled studies, there is brought into sharp focus any suspected aetiological associations disclosed by the above retrospective studies. Two groups should be studied which ideally differ only by the one suspected aetiological factor. Study of these two groups will require to be continued over a period sufficient to ascertain whether or not the suspected aetiological factor affects the incidence of the dental disease under investigation.

Some aetiological factors, determined as being significant by the above epidemiological research, may be adjudged as being likely possible of control. Suitable research laboratory projects might then be designed to investigate such possible methods. Pilot clinical studies would then be carried out to test the preventive measure within a small group of subjects.

A preventive procedure which has shown success in a limited group of subjects should then be applied to a representative sample of the total population for which it is designed. This is known as determinative epidemiological research. Two groups of the population, differing only by the preventive procedure, would be studied and the incidence of the dental disease or abnormality under investigation compared. If such results are favourable a sound preventive procedure has been developed.

Next will need to be determined the practicability and cost of applying this procedure to the total population or an appreciable segment thereof. At that time it may also be possible to demonstrate that at the existing rate of prevalence or incidence of a dental disorder, available dental services (including private practitioner services) cannot in fact provide the required treatment. Alternatively it may be possible to forecast a considerable economic saving between the difference of the costs of treatment at the existing rate of prevalence and at the anticipated rate of prevalence, and the cost of introducing the preventive measure.

Taking all the above factors, and possibly others, into consideration an evaluation will be possible as to the degree of usefulness of the preventive procedure. It is to be hoped that it will be such as can then be confidently recommended by the dental profession as likely to improve very considerably the dental health of

Malaya and possibly of many other countries.

SUMMARY

1. The problem of untreated dental disease in Malaya and Singapore is acute.

2. The present dental personnel of Singapore and Malaya are reported, including a description of the training and activities of the school dental nurses trained at Penang.

3. The need for a planned programme of dental research has been stressed and the direction such research should take has been described.

4. Dental epidemiological studies of three population groups have been planned.

5. A standardized method for carrying out these and other surveys has been prepared whereby the results of all such surveys may be comparable.

6. Statistical methods to be employed in the analysis of the results of the surveys are described.

7. Two of the surveys planned have been carried out.

8. A programme for future epidemiological research has been outlined.

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Caries Resistant Teeth*

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In any disease process of bacterial origin there are two main factors to be considered: the virulence of the attacking agents and the resistance of the tissues of the host. In this respect, dental caries is no different from any other infectious disease.

Ever since William D. Miller's observation that dental caries is a "chemico-parasitic process consisting of decalcification and dissolution of tissues by acids of bacterial origin due to fermentation of carbohydrate", the emphasis in investigations into caries aetiology and control has been placed on the role of the attacking agents. Thus the attempts at inhibiting bacterial growth by bacteriostatic agents, by carbohydrate restriction, by oral hygiene measures, are all aimed at this aspect of the problem.

The role of tooth resistance to attack by the caries process has not been completely ignored. We have had to recognize it and have used it to explain individual

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variations in caries susceptibility. However, these differences in resistance were largely believed to be built in at the time of tooth formation and thus unalterable after eruption. Such ideas were consistent with the knowledge of the time, that teeth once erupted were immutable in chemical or physical make-up.

Research of the past 15 to 20 years with the use of radio-active isotope tracers has forced us to change some of these views. We now know that there is a constant turnover of ions in teeth, which is partly a physical exchange; in part however it is believed to be dependent upon the activity of the dental pulp. This means we can no longer dismiss the possibility that there may be post-eruptive changes in tooth resistance to caries.

Review of Experimental Work

Experimental evidence gathered over the past ten years suggests that the teeth undergo changes of a chemical or physical nature after eruption which depend upon the degree to which they are used in chewing. The significance of these findings is two-fold: first, they add to the growing body of evidence that the teeth are not inert but are dynamic structures subject to change by environmental influences, and second, we must consider the possibility that these changes may affect the resistance of the teeth to attack by the oral bacteria and their products in the caries process.

The remarkably low prevalence of caries exhibited by some primitive peoples subsisting on their native diets has been ascribed to either an absence of deleterious foods, such as sugars and fermentable carbohydrates, or to the presence of protective items, such as tough, detergent foods, which keep the teeth clean. In certain instances, neither of these explanations is satisfactory. Since many investigators have pointed out that a common characteristic of most of these primitive fares is the physical hardness of some item in the diets requiring vigorous mastication, Neumann[1], some years ago suggested the possibility that increased susceptibility to caries may be the result of an adaption by the dental tissues to decreased function. That is, that civilized diets, being much softer in texture, and requiring little or no force for mastication will produce in time modifications in the structure of the teeth and make them more easily invaded by the caries processes.

Methods

In order to test this hypothesis a series of experiments was devised to explore whether any measurable changes could be produced in teeth by altering their chewing function. These experiments were done on laboratory animals—rats and monkeys. These were followed by a controlled clinical study on children and finally by a field survey of primitive peoples of Mexico, Central America and Peru. The results of these experiments will be described briefly.

Laboratory Experiments

At first rats were used, and methods which had proven successful in similar studies on disuse atrophy in bone. Not knowing in what part of the teeth such changes might be found, we first compared specific gravities of whole rat molars. In this experiment a group of rats was maintained for several weeks on an all-liquid diet and in bare cages without chewing material of any kind. The molars were then removed and the specific gravity of each whole tooth was determined by a flotation method[1b]. The results showed a slight decrease in specific gravity in the non-chewing molars when compared to a group of normally chewing controls. The differences were small and not significant for the number of animals used; the results were considered suggestive only.

A later experiment utilized Rhesus monkeys, one group of 5 being fed their rations in a soft, well-cooked or soaked condition while the control group of 5 animals was fed all foods raw and in addition, were given a daily ration of raw whole wheat grain and sugar cane. After

varying periods of time, the first molars of all animals were removed and weighed and dried to constant weight. The content of water was determined for each and the non-chewing molars were found to contain more water than the teeth of the hard-chewing controls[2]. The differences here were significant. In this connection, two points deserve emphasis: first that relatively large increases in water content have been found in bones which have been immobilized for several weeks[3] and second, that the only difference ever reported between analysis of dentine taken from sound teeth and sound dentine from carious teeth was that the latter showed a greater water content[4].

In the next experimental step radioactive tracers were used, again on Rhesus monkeys. The animals were forced by various means to chew on one side of the mouth for several months and the uptake of P^{32} was compared in the molars of the chewing versus the non-chewing sides in each animal. Unilateral chewing was induced in one of three ways: (1) by unilateral intracranial section of the motor division of the Trigeminal nerve, (2) by resection of the major muscles of mastication on one side, or (3) by extraction of one quadrant of teeth.

After varying periods of unilateral chewing, P^{32} was injected into the peritoneal cavity and the uptake of the isotope in the teeth was followed over a period of weeks by means of a small end-window Geiger counter applied directly to the occlusal surfaces of the molars in situ. Later these teeth were extracted and dissolved and the total activity was determined in solution. These studies showed that the molars of the non-chewing side took up significantly greater quantities of the isotope than the molars of the chewing side in the same animal[5]. This higher uptake appeared to be more marked in the enamel since surface counts showed larger differences than counts of whole teeth in solution. It is of interest to mention here that studies on disuse atrophy in muscle[6] and in bone[7] have also shown that there is a relative increase in the uptake of radio-phosphorus in the organ in disuse.

The question arose whether any purely physical effects were involved due to these variations in chewing loads and in a series of experiments the amount of shortening of extracted human teeth under varying loads was measured. Even at pressures below 100 lbs. there is some shortening of teeth amounting to one to two thousandths of an inch, depending on the measure of load applied. And even our normally low chewing loads from 25 to 75 lbs. and less cause a measurable amount of compression. Such findings suggest that there may be an intermittent pumping action during mastication. It should be added that such shortenings under the transmission of a definite load, for instance of 50 lbs., is not influenced by the compressibility of the underlying structures.

Clinical Experiments

The laboratory experiments strongly suggested that the teeth may be structurally affected by variations in chewing stresses. The next step was to explore whether increasing chewing function could produce clinically a reduction in caries rates. A study[9] was conducted in an institution (Children's Village, Dobbs Ferry, N.Y.) in which children are housed, in groups of 20, in cottages under supervision of "cottage parents". All food is prepared in a central kitchen and is distributed to each cottage. The population, averaging 12 to 14 years of age, was divided into three groups: the children in one group received each daily a piece of raw sugar cane which they chewed with vigor after the mid-day meal, those in the second group each received the juice milled from a piece of sugar cane and those in a third group received neither and served as controls. The diet was not changed in any other way.

DFM rates were established for each group at the beginning and after 2½ years of such a regimen by routine clinical and bite-wing X-ray examination of each child. At the end of the 2½ year

period the average increase in DMF teeth per child was one-half as great in the cane chewing group as in either of the other two groups.

Sugar cane seems impractical, since it would be chewed under close supervision, or else sucked in lollipop fashion at the pleasure of the individual child.

A similar study on much younger children (3-5 years) in day nurseries of New York City also showed a reduction in DMF rate in a group which were given daily a piece of hard resin-gum similar to bubble gum but especially prepared, much harder, and only slightly flavored. This experiment,[10] carried on over a two-year period was unsatisfactory due to the high turnover of children and the small number remaining to the end of the period.

The clinical studies suggested that caries can be inhibited by incorporating a hard chewing item in the diet; these clinical studies did not, however, indicate the mechanism by which the inhibition is produced.

Field Studies

To test the hypothesis in the field, it was next decided to visit some widely scattered and isolated primitive groups and to explore whether any correlation could be found between caries rate and hard chewing diets.[11, 12] With the aid of anthropologists from the American Museum of Natural History, Indian tribes still on traditional diets in Mexico, Central America and Peru were selected for this study: The Otomi in the semi-desert of the Mezquital Valley of Central Mexico, the Zapotec, Zsotsil and Chamula of southern Mexico, tribes of Mayan descent in Guatemala, the primitive Shipibo Indians in the Amazon headwater basin, the Quechua who are descendants of the Incas in the Peruvian Andes, and the Aymara, who inhabit the high plateaus of Peru and Bolivia. Adult males were examined chiefly and DMF rates, dietary characteristics and maximum biting strength, as measured by a Brekhus' Dynamometer[13], were noted.

Generally we saw in the more isolated groups excellent teeth, with average DMF rates near 0.1, that is virtual freedom from caries, in a group of 19 adult Otomi from more remote regions, and in a group of 51 young adult Aymara near Lake Titicaca. This is only about one one-hundredth of the average caries rate customarily found in New York. Such exceedingly low caries prevalence has been reported before by many observers from natives on many different diets[14].

The average biting strength of 160 to 180 lbs. found in these groups, was considerably higher than the 126 lbs. amongst athletes in our own Middle West,[15] in spite of the much shorter physical stature of the Indians—their height averages about 5 feet—and a generally poor state of nutrition and health.

The DMF amongst groups of Quechua in the high Andes varied around 1.2 in some regions, however in more modern villages and towns they develop caries almost to a degree which we are accustomed to see. The instance of rapid deterioration of the teeth on modern diets are so numerous that one is forced to the conclusion that caries is principally a dietary disease and that all other influences are subordinated to this preeminent factor.

Most of the tribes lived on deficient, unbalanced diets, low in what we would call "protective foods", like fresh vegetables, fruit, meat and dairy products. Their diets were excessively high in carbohydrates, in some areas even in simple sugars as corn syrup. They lacked knowledge of oral hygiene and the water supplies were too low in fluoride to be of influence.

However widely the diets of the tribes with sound teeth varied chemically—they had in common the presence of some nonspecific item which placed a higher load on the teeth, than we would find in any high caries area. Such items were toasted broad beans, toasted corn and types of bread made from a toasted native grain that seemed to us exceedingly hard. Even when the diet was mostly soft, some items provided the teeth with compression in

higher ranges, as the cracking of bones of whatever animal is eaten or the opening of various hard shelled nuts with the teeth.

These customs could explain the high biting forces in spite of a non-athletic physique otherwise. This field survey certainly seemed to correlate caries with physical factors of the diet.

With no intention of excluding all other influences, our findings in the laboratory and amongst eight Indian tribes uphold the concept which identifies the major non-random factor in caries as a biophysical agent — that is — the effect of the range of loads on the structure of the teeth.

Conclusion and Summary

The following conclusions may be drawn from the observations:

1. Teeth are dynamic structures which vary throughout life. There is no doubt that "maturation" takes place, and there are indications that in youth and possibly through middle age this process may be reversible under conditions of disuse.

2. Changes of a physical or chemical nature may be produced in the teeth by modifications in chewing loads.

3. The single most important factor in caries is the diet. Many suspected factors can be ruled out by observing the greatly varying diets of caries free human tribes. Our findings support the concept of the physical properties of the diet as being of major importance in producing resistant teeth but there is no doubt that the destructive process depends both on tissue resistance and on the much emphasized attacking agents in the mouth.

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Hematologic studies were carried out on ten volunteer adult patients to determine the possible effect of exposure for a full-mouth roentgenographic examination of 14 periapical roentgenograms on the formed elements of the blood as evidenced by changes in the total white cell count, differential white cell count, and platelet count performed at suitable periods (one day before and up to seven days afterward) after exposure to roentgen-ray radiation. In terms of the testing procedures utilized, no significant hematologic changes of clinical importance were noted between findings before and after exposure to radiation under the conditions of this study.

Jack Budowsky, D.D.S. et al Journal of the A.D.A

A Study of Neural Endings in the Human Gingiva and Periodontal Membrane

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The innervation of the gingiva and periodontal membrane has been the object of considerable study during the past 50 years, yet findings have differed and have often been contradictory in regard to the presence, type and location of neural endings.

The purpose of the present study was to gain additional information about the possible presence and location of neural endings in human gingiva and periodontal membrane and thus help to conform some of the conflicting opinions on the subject.

A better understanding of the neural supply of the gingiva and periodontal membrane and the types of neural endings present should enable one to help correlate physiologic mechanisms with clinical management. Clinicians long have recognized that neural receptors of touch, pressure, pain and temperature which exist in the tissues surrounding the teeth can influence the functioning of the masticatory apparatus.

Review of the Literature

Numerous investigations have been carried out on the innervation of the gingiva and periodontal membrane. Many of these studies have dealt with the presence or absence of nerves and neural endings in the supporting structures of the teeth of various animals. Since the present study is of man, the literature reviewed will be limited to the studies of human tissues.

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Gingiva

The presence in gingiva of both loosely and tightly coiled neural endings has been reported by Kadanoff[7], Lewinsky and Stewart[10] and Bradlaw[2]. Kadanoff[7] described the loose and close coils as non-encapsulated and lying in the papillae of connective tissue. He found encapsulated endings located deep in the sub-epithelial tissues and described them as Krause's end-bulbs and Meissner's touch-corpuscles. Lewinsky and Stewart[10] reported the presence of close coiled endings near the apices of the papillae of connective tissue as well as loose coils occupying the whole of the papillae. Bradlaw[2] described the presence of loose and close intrapapillary neural coils running along the sides of the papillae. Gairns and Aitchison[5] described encapsulated Krause's corpuscles in the connective tissue below the papillae as well as in the papillae.

Of interest were reports of unmyelinated neurofibrils passing to the epithelium of the gingiva. Lewinsky and Stewart[10] described thick intra-epithelial fibers originating from small close coils and fine fibers arising from sub-epithelial nerves. Further fine epithelial fibers were seen arising from sub-epithelial nerves. Gairns and Aitchison[5] described "ultra-terminal fibers" arising from several types of bulbs or whorls running to the outermost layers of the epithelium and ending in knob-like structures. Bradlaw[2] noted intra-epithelial fibrils along the sides of the papillae of connective tissue.

Bernick studied gingival tissues but did

not observe any specalized neural endings. In the free and attached gingiva he noted neurofibrils passing through the tunica propria to the subepithelial border where they branched and supplied the papillae of the connective tissue and terminated in free neural endings. A few of the terminal fibrils penetrated the epithelium for a short distance. Held and Baud[6] did not observe encapsulated or coiled neural endings in the gum. They did, however, note gingival neurofibrils ending in a metaterminal apparatus.

Periodontal Membrane

There are fewer reports available on the presence or absence of nerves or neural endings in the periodontal membrane than in the gingiva.

Definite endings were noted by Dependorf[4] when he described networks of neurofibrils in the periodontal membrane. These fibrils ended in fine pointed processes especially in the cementoblastic region. Kadanoff[8] noted neurofibrils ending in terminal plexuses of which some of the fibrils had small knob-like swellings. He observed no encapsulated neural endings. In contrast to Dependorf, Kadanoff did not observe endings in the cementoblastic layer. Bradlaw[2] noted terminal neural coils in the periodontal membrane appearing near the cementum. Lewinsky and Stewart[9] described the neurofibrils of the periodontal membrane as separating into fine arborizations or terminal networks. Many of these terminal fibrils ended in small rounded bodies. Bernick[1] described the neurofibrils of the membrane as terminating in fine arborizations from which neural filaments arose to pass to the stroma of the membrane as well as the cementoblasts and cementum. He noted elongated spindle-like neural structures located mainly in the region of the apical third of the root.

The investigations of Lewinsky and Stewart[9], Bradlaw[2] and Bernick[1] agree that many neural bundles pass gingivally in the periodontal membrane in a location either near the alveolar bone or along the cementum of the surface ofof the root. Many of these nerves accompany blood vessels.

Innervation of the cementum has been studied by many investigators. Dependorf[4] described some neurofibrils of the periodontal membrane as terminating in the odontoblast layer. Kadanoff[8] disagreed with Dependorf's findings and stated that neurofibrils, which entered the cementoblast layer, looped back into the connective tissue of the periodontal membrane. Bradlaw[2] and Lewinsky and Stewart[9] supported Kadanoff's observations of neurofibrils turning back on themselves after approaching the surface of the root. Bernick[1], on the other hand, supported the views of Dependorf. He described the fine neural filaments of the periodontal membrane as terminating among the cementoblasts and in the cementum itself.

Materials and Methods of the Present Study

Fresh, human gingivae, obtained by biopsy, were immediately placed in a fixative consisting of a 10 per cent solution of chloral hydrate in a 10 per cent solution of formalin. Extracted human teeth which had suitable areas of gingiva, periodontal membrane and alveolar bone attached were also collected. In addition, the maxilla of a two-and-a-half-year-old child was included in the study.

Following fixation, the calcified structures were demineralized in a solution of equal parts of 20 per cent sodium citrate and 50 per cent formic acid for approximately two weeks. The tissues were embedded in paraffin and sectioned in thicknesses ranging from 15 to 50 micra. Thin sections illustrated greater cellular detail while thicker sections showed better continuity of neurofibrils.

The tissues were stained by the Powers' modification of Romane's method of impregnation with silver nitrate[13]. This method of staining was discussed in a previous publication[12]. Neurofibrils in tissues stained by the Powers' method appeared black in contrast to the lighter staining of the surrounding non-nervous struc-

tures. Serial sections of tissue impregnated in this manner allow the course of the neurofibrils to be followed closely throughout the tissues.

Observations

Gingiva

Gingival nerves were seen to arise from deep in the subepithelial connective tissue and then pass towards the epithelium. As the bundles of fibers passed toward the epithelial surface, branches were given off which terminated in the sub-epithelial papillae, Fig. 1.

The gingivae were found to contain a variety of neural terminations as may be seen in Fig. 7. The frequency of occurrence of the neural endings varied greatly between different areas of the gingiva. Few intra-papillary neural endings were noted in the area of the free gingiva. The attached gingiva, however, contained many organized neural endings, Figs. 1, 3, 4, 5, and 6.

Immediately beneath the epithelium many myelinated neurofibrils were noted, which often divided into small branches to end in fine arborizations, Fig. 2. In some areas of the attached gingiva four and five adjacent papillae contained neural endings which varied in size and shape. Three types of encapsulated neural endings were observed within the connective-tissue papillae. Meissner-type tactile corpuscles frequently were observed, as can be seen in Figs. 3 and 4. These organized endings appeared elongated in shape, composed of a central mass of irregular cells, and covered by a delicate capsule of connective tissue. Each capsule was penetrated by an irregularly curved neurofibril.

Large, round end-bulbs also were observed in the connective-tissue papillae, Fig. 5. They were less numerous than the Meissner-type corpuscles and appeared similar to the Krause end-bulbs found in the skin. A single large neurofibril was found entering the end-organ and the interior of the bulb presented a granular appearance.

The third type of encapsulated endings appeared as darkly stained knobs, Fig. 6. These end-bulbs were smaller than either the Meissner or Krause type of endings. The knob-like endings arose either from one or two large myelinated neurofibrils which appeared within the connective-tissue papillae. No intra-epithelial fibrils were noted that arose from the encapsulated neural endings in the papillae.

Varying types of free neural endings

FIGURE 1.

Human gingiva. Numerous organized nerve endings appear in the connective tissue papilla underlying the epithelium. Located in the lamina propria below are nerve bundles. CTP, connective tissue papilla; NB, nerve bundle; LP, lamina propria.

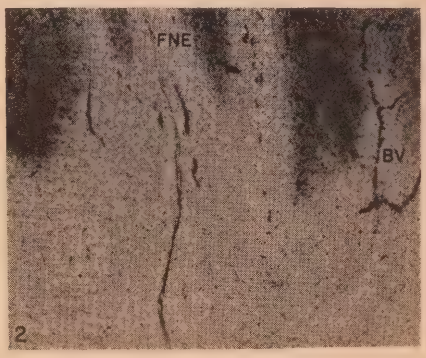

FIGURE 2.

Free nerve ending in human gingiva. FNE, free nerve ending; BV, blood vessel.

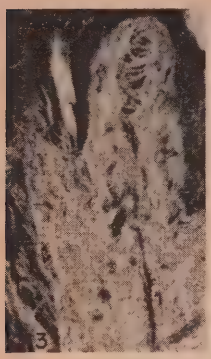

FIGURE 3.

Meissner-like corpuscle in human gingiva. This organized ending appears composed of a central mass of spindle shaped cells surrounded by a delicate connective tissue capsule.

FIGURE 4.

A Meissner-like corpuscle with a neurofibril entering from below. Higher magnification than shown in Figure 3.

FIGURE 5.

A Krause-like end bulb. These organized endings appear large, round and contain many darkly stained granules.

FIGURE 6.

A darkly stained end bulb which can be observed to be smaller than either the Meissner or Krause type endings.

FIGURE 7.

Large neural trunks centrally located in the periodontal membrane. They are positioned in the direction of the long axis of the tooth. D, dentine; NT, nerve trunk; PM, periodontal membrane; B, bone.

FIGURE 8.

Fine neurofibrils entering the periodontal membrane from the alveolar bone proper. N. nerves; B, bone; PM, periodontal membrane.

FIGURE 9.

Organized nerve ending in the human periodontal membrane. D, dentine; PM, periodontal membrane; N, nerve; NE, nerve ending; B, bone.

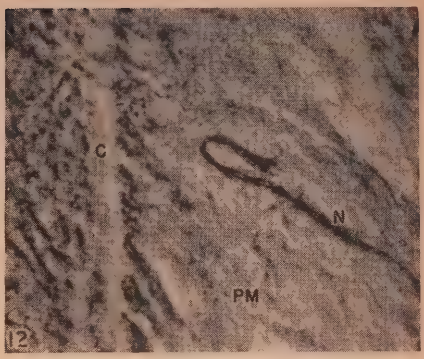

FIGURE 12.

Nerve fiber approaching surface of cementum and looping back into periodontal membrane. C, cementum; PM, periodontal membrane; N, nerve.

were observed in the connective-tissue papillae. These neurofibrils did not seem to terminate in any type of specialized endings.

FIGURE 10.

An organized nerve ending in periodontal membrane under high magnification. The ending appears to be composed of branching and interwoven fibers.

FIGURE 11.

An organized nerve ending in periodontal membrane. Terminal fibrils appear both medullated and non-medullated.

Periodontal Membrane

The large neural trunks of the periodontal membrane apparently arise from the apical region of the alveolus and run towards the gingiva in the direction of the long axis of the tooth. These large trunks lie in a central position in the periodontal membrane, Fig. 7. In addition, fine neurofibrils were observed to enter the periodontal membrane through foramina in the alveolar bone proper, Fig. 8. Some of these fibrils from the alveolar bone appeared to run in an apical direction and others toward the gingiva. The large neural bundles appeared associated with blood vessels of the periodontal membrane while the smaller bundles and single neurofibrils showed no such relationship, Figs. 7 and 8.

Highly organized neural terminations were observed in the periodontal membrane, Figs. 9, 10 and 11. These end-organs appeared to be large, ovoid structures consisting of both medullated and non-medullated fibrils which were interwoven. Delicate appearing fibers of connective tissue were orientated around the periphery of these neural structures, Figs. 9, 10 and 11.

In some areas of the periodontal mem-

brane, single neurofibrils extended toward the cementum of the root. Some of these fibrils ended as small loops in close relation to the cementoblasts while others curved back from the cementum to terminate as blunt endings, Fig. 12. No neurofibrils were observed penetrating the cementoblastic layer or the cementum proper.

Discussion

Gingiva

The findings of the present study indicate that the human gingivae are highly innervated and thus would agree with the observations of Bradlaw[3], Gairns and Aitchison[5], Lewinsky and Stewart[10] and Kadanoff[7].

The investigation also revealed the presence of three types of organized, encapsulated neural terminations in the connective-tissue papillae of the gingiva.

Meissner-like corpuscles observed in the connective-tissue papillae were similar to those described by Gairns and Aitchison[5] with respect to appearance and location. Kadanoff[7] has described a Meissner-type of corpuscle with cells within its structure. Lewinsky and Stewart[10] did not designate any of the structures which they observed as Meissner's endings but described them as close and loose coils. They did not observe capsules of connective tissue which is in contrast to the findings of Kadanoff[7] and the present study. Lewinsky and Stewart[10] noted that many more than two neurofibrils might run into the neural endings. Kadanoff[7] never observed more than two nerves supplying a corpuscle. Gairns and Aitchison[5] showed photomicrographs of Meissner-like structures with only one myelinated neurofibril running into each structure. The Meissner-type endings observed in the present study appeared to be supplied by a single neurofibril.

The Krause-type of end-bulbs seen in the present study were similar to the large close coils found by Lewinsky and Stewart[10] and Krause's corpuscles described by Gairns and Aitchison[5]. These endings were located in the connective-tissue papillae. Kadanoff[7] and Gairns and Aitchison[5] noted them in this same area as well as in the underlying lamina propria. The results of the present investigation show no branching of fibers in the end bulb which is in agreement with the findings of Lewinsky and Stewart[10] but in contrast to the findings of Kadanoff[7]. These organized endings appeared to be formed by curling or looping of the terminal portion of the neurofibril.

The third type of ending observed differed from any described by Gairns and Aitchison[5] and Lewinsky and Stewart[10]. It appeared as an encapsulated, darkly stained, knob-like structure while terminations in the earlier studies cited were described as larger and more loosely coiled.

Held and Baud[6], while studying gingiva with polarized light, did not observe any encapsulated or coiled neural endings. Bernick's[1] account of an innervation varying with the different parts of the gingiva agrees with the findings of the present study. However, his failure to find specialized neural endings differs from the findings of this investigation.

Periodontal Membrane

Most of the studies on the innervation of the periodontal membrane agree, as does this study, that the neural source is derived from the apical region and the alveolar bone proper opposite the root surface. However, descriptions of the extent of branching and the mode of termination of the nerves still are not in agreement.

The finding of the present study that large neural trunks run centrally in the periodontal membrane differs from those of Bradlaw[2] and Lewinsky and Stewart[9] who report that these structures lay close to the alveolar bone. The finding is in general agreement, however, that the larger neural trunks are directed gingivally in the periodontal membrane in association with blood vessels. The findings of accessory neurofibrils entering the periodontal membrane through foramina in the alveolar bone have been previously

shown by Dependorf[4], Kadanoff[8], Bradlaw[3] and Lewinsky and Stewart[9].

The descriptions of organized neural endings in the human periodontal membrane differ. Kadanoff[8] described terminal plexuses or fibers, some of which ended in small knob-like swellings. He did not note any encapsulated endings in the membrane. The findings of Lewinsky and Stewart[9] of neurofibrils ending in arborizations and small rounded bodies are in agreement with Kadanoff's[8] observations. Bernick[1] described myelinated neurofibrils which lost their sheathes and terminated as spindle-like structures. The highly organized, encapsulated neural terminations noted in the present study appear different, therefore, from the endings described by any of these investigators.

The presence of organized neural terminations in the periodontal membrane may explain the tactile or pressure sensitivity often experienced in cases of malocclusion or bruxism. These sensations must arise from the periodontal membrane as they have been found to remain after root canal therapy has been performed.

Much attention has been directed toward the possibility of an innervated cementum. Dependorf[4] and Bernick[1] both described neurofibrils terminating in the cementoblastic layer or cementum. The findings of this present study agree with those of Bradlaw[3], Kadanoff[8], Lewinsky and Stewart[9] that the majority of the neurofibrils approach the cementum, form loops and pass back toward the center of the membrane.

Summary

An investigation of the distribution of nerves and neural endings was carried out on human gingiva and periodontal membrane by the use of the Powers' modification of Romane's method of silver-impregnation.

Organized neural terminations were found to be more abundant in the area of the attached gingiva than in the free gingiva. Three types of encapsulated, organized neural terminations were seen in the connective tissue papillae of the attached gingiva. These endings consisted of Meissner-type corpuscles, Krause-like end bulbs and tightly coiled knobs. Fine, free neural endings were observed in other areas of the attached gingiva.

Large neural trunks were found located centrally in the periodontal membrane passing from the apical area of the root of the tooth to the gingival third in association with blood vessels. Fine neurofibrils entered the periodontal membrane from the alveolar bone proper and ran both apically and gingivally. Organized, encapsulated neural terminations were seen throughout the membrane. These structures were ovoid in shape and consisted of interweaving fine neurofibrils. Other fine, free neural endings also were seen throughout the periodontal membrane. Neural coils were observed along the surface of the cementum. Other fibers passed towards the surface of the cementum but, before contacting this surface, curved back into the membrane proper.

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The Fluoridation of Water Supplies—New Zealand

The following is the Summary of Conclusions of the Commission of Inquiry on "The Fluoridation of Public Water Supplies" appointed by the Governor-General of New Zealand acting by and with the advice of the Executive Council. The hearings extended for various lengths of time in five locations in New Zealand. A total of 121 witnesses gave evidence in person.

(A) The Value of Fluoridation

536. *The Dental Health Problem in New Zealand* — (1) Virtually every child born in New Zealand experiences dental decay and, in consequence, an unduly high proportion of the population over the age of 21 years uses some form of denture.

(2) Sustained efforts over many years by both the Department of Health and the dental profession to introduce improved dietary habits have been ineffective. At the present time there is no hope of any programme of dental health education achieving a significant beneficial effect.

(3) The problem of controlling the rate of dental decay is beyond the resources of the dental services in this country.

(4) The filling of teeth is not a preventive measure, but merely a means of treating decay.

(5) The incidence of dental decay in New Zealand is so widespread and severe that it constitutes a major problem in public health and it is a matter for grave concern.

537. *The Relation of Fluoride to Dental Health* — (1) Fluoride is a natural component of all teeth and by hardening their mineral structure it makes them more resistant to dissolution by acids.

(2) In New Zealand the fluoride content of potable waters is considerably below 1 ppm.

(3) In areas where there is fluoride in drinking waters at optimum concentrations, whether naturally present or artificially added, the prevalence of dental decay in children is at least 50 per cent lower than in areas where the fluoride content is 0.2 ppm. or less. In the higher fluoride areas about one-third of all children escape dental decay entirely and the beneficial effects continue into adult life.

(4) There is no evidence that the consumption of fluoridated water would do harm to the pulp of the teeth or to the tissues which surround and support them.

(5) The regular ingestion of a substantial excess of fluoride (more than 1.9 ppm.) in the drinking water may cause dental fluorosis. This is only one type of mottled enamel. Other enamel defects unrelated to fluoride are common. Enamel defects can develop only during the years of childhood.

(6) When the drinking water contains 1 ppm. fluoride, or slightly more, the incidence of dental fluorosis has no significance.

(7) As the result of painstaking and thorough scientific observations conducted over a period of at least 40 years, there is a rational basis for the proposal to add fluoride to public water supplies in which this trace element may be deficient.

538. *The Value of Fluoridation in New Zealand* — The fluoridation of public water supplies in New Zealand would be

followed by substantial benefits to dental health.

(B) The Behaviour of Fluoride In The Body

539. *The Nature of Fluorine* — (1) The element fluorine does not occur in a free state in nature and has no relevance to the fluoridation process.

(2) The process is aimed at increasing the concentration of fluoride ions in water supplies, and those ions do not possess the properties of fluorine in its free elementary state.

(3) Excepting radioactive fluoride, which is not relevant, all fluoride ions are alike and, irrespective of their source, do exactly the same things in both a chemical and a biochemical sense.

(4) Organic compounds of fluorine are extremely stable and do not dissociate to give fluoride ions in aqueous solution.

(5) No distinction can be drawn between the fluoride naturally in water and the fluoride proposed to be added to it by the fluoridation process.

540. *The Ingestion of Fluoride* — (1) Fluoride is a normal constituent of human diet and, in fact, no diet is completely devoid of this element.

(2) The principal source of fluoride is water in all normal circumstances.

(3) Fluoride is a normal constituent of the bony structure of the body and of teeth.

(4) It is absorbed easily but, since most of the fluoride absorbed is readily excreted by the kidneys, and the residue deposited in bones, it does not accumulate in soft tissues or impair the activity of enzyme systems.

(5) Storage in the bones is a reversible process, although it is likely that some retention occurs at all levels of intake.

541. *The Toxicity of Fluoride* — (1) Fluoride is beneficial in proper amounts and the optimum level in drinking water can be established with certainty.

(2) In common with all foods, including pure water, it can become harmful in substantial excess.

(3) Acute poisoning could be produced only by such a great excess that the possibility becomes irrelevant in relation to the fluoridation of water.

(4) In the proposal to fluoridate water there is no risk of chronic fluoride poisoning.

(5) The suggestion that fluoride is an enzyme poison has no relevance to fluoridated water.

(6) The implication contained in certain anti-fluoridation literature that fluoridation involves the use of a substance with properties similar to certain deadly organic compounds of fluorine is absurd and entirely misleading.

(C) The Medical Questions

542. Fluoridated water does not cause or aggravate any of the following disorders:

(1) Disorders of the brain and nervous system, disorders of the special senses, and disorders of the mind.
(2) Disorders of the heart and blood vessels.
(3) Disorders of the kidney and urinary tract.
(4) Cancer.
(5) Diabetes or disorders of the thyroid gland.
(6) Disorders of the gastro-intestinal tract and the liver.
(7) Disorders of pregnancy and labour or development defects in children.
(8) Disorders of bones, joints, and the bone marrow.
(9) Irritation of the eyes or irritation of mucous membranes.

543. *The Spira-Waldbott Syndrome* — The signs and symptoms of the alleged syndrome may be due to any number of unrecognized causes and there is no casual relationship between any of these signs and symptoms, the ingestion of water containing 1 ppm. of fluorine and food cooked in this water.

544. *General Conclusions Concerning the Relation of Fluoride to Health* —

(1) The process of fluoridation does not add a substance that is foreign to the

water but merely brings about a slight change in the concentration of the fluoride already present naturally in that water.

(2) No diet is devoid of fluoride, and water is the normal vehicle for conveying this substance to the body.

(3) Fluoride is a normal constituent of bones and teeth.

(4) Fluoride is a nutrient and is beneficial in proper amounts. In common with many other foodstuffs it has adverse effects on the body when ingested in excess.

(5) In the proposal to fluoridate public waters supplies there is no risk of excessive ingestion; there is no risk of chronic fluoride poisoning; and the possibility of acute poisoning can be disregarded entirely.

(6) No harmful effects on health will follow the fluoridation of water supplies whether in respect of the complaints specifically made before us or otherwise.

(D) Mechanical Considerations

545. (1) Several chemicals of a high standard of purity are manufactured for the fluoridation of public water supplies and these are entirely suitable for that purpose.

(2) The process of fluoridation involves no new or unusual problems in waterworks engineering.

(3) Apparatus capable of mixing the fluoride in water supplies with precise and unvarying accuracy is readily available.

(4) The process does not involve disadvantages to industry or in respect of water reticulations, or plant.

(5) Subject to the controls recommended in sub-paragraph (6) (which follows) the fluoridation of public water supplies can be carried out in New Zealand with accuracy and safety.

(6) To avoid fluoridation projects developing in any haphazard way it is recommended that:

(a) Standard specifications should be introduced dealing with all aspects of the treatment of water supplies with fluoride.

(b) A supervisory and controlling body should be set up on a national basis with authority to ensure that all proposed plants conform to the standards laid down.

(E) The Lack of Alternatives To Fluoridation of Water Supplies

546. (1) The food alternatives suggested are not practicable as vehicles for fluoride as they do not permit a low optimum concentration of the substance.

(2) Humans naturally obtain the greater part of their dietary fluoride in water which is universally consumed.

(3) Because the consumption of water is regulated by physiological need the ingestion of fluoride by this means is self-limiting.

(4) The efficacy of fluoridation as a public health measure is proven.

(5) No alternative suggested would be effective as a public health measure.

(6) There is no practicable method of adjusting the daily intake of fluoride other than by addition of that substance to public water supplies.

(F) Personal Rights

547. It is our opinion that:

(1) The avoidance of fluoridated water might cause inconvenience, but in no case would its use be compulsory.

(2) The process does not involve medication of community supplies.

(3) Humans have an inherent right to water as one of the essentials of life; but no such wide interests in regard to community water supplies which are merely one of the means of providing it.

(4) No question of personal liberty arises in regard to fluoridation.

(5) As the process would not be acceptable if it were ineffective or hazardous, any objections to it based on personal right should be evaluated as objections to a public health measure which is not merely beneficial but also safe.

(G) The Position of Local Authorities

548. It is our opinion that:

(1) A decision to fluoridate public water supplies should be left to the communities concerned.

(2) A referendum or local body poll is an unsatisfactory method of reaching a decision on a technical and complex question such as fluoridation.

(3) Local authorities are established for the purpose of making community decisions and should be permitted to decide whether or not public water supplies should be fluoridated.

(4) The powers of local authorities in regard to the taking of decisions to fluoridate public water supplies, and also in regard to the implementing of such decisions, should be limited to the extent indicated in the following subparagraphs.

(5) The special order procedure described in section 77 of the Municipal Corporation Act 1954 should be followed by all local authorities proposing to fluoridate public water supplies.

(6) A national body should be established charged with the duty of encouraging, advising, and assisting local authorities in regard to the installation and maintenance of fluoridation plants. It should have authority to require compliance with appropriate and uniform standards, and those standards should be laid down by the Government.

(H) General Finding

549. Introduced in accord with the principles outlined in paragraph 548 we are satisfied that widespread use should be made of the fluoridation process for the purpose of achieving an urgently needed improvement in the present serious state of dental health in New Zealand.

"Dentists, unlike fruit, do tend to become more sour the longer they are kept. There was a time when dentists were professional colleagues in all that is implied in that term, not competitors. Nor was this one of those ideals like peace on earth or UNO, represented by lip service, and far too much of that. The majority found great satisfaction in being called professional gentlemen, a title not registerable, but much harder to earn than most. To criticize another's work adversely, either directly or by implication, is but a poor attempt to gain a reputation, usually of no lasting value. Nor are methods more subtle less ungracious. That raised eyebrow at the sight of the other fellow's denture, that pained expression when examining his fillings, and that oh, so sympathetic face when the patient tells her vivid story of her extracted tooth, no detail of laceration or all-in wrestling spared — none of these lends one cubit to the actor's stature. Personally, I am at once suspicious of any patient who complains long and bitterly of previous treatment. And, quietly, beween ourselves, I have seen cervical margins of my own fillings on X-ray films that have given me a nasty jolt. I might be even more mortified if I knew how many dentures are now being remade by colleagues whose technique (of prosthesis or charm) is far superior to mine."

Edward Samson, F.D.S., R.C.S. Eng.
British Dental Journal.

ABSTRACTS

Pulp Management for the Child Patient

MELVIN A. NOONAN, D.D.S., M.S.

Histologically there is no difference between the primary and permanent pulp tissue. Both are capable of offering their own defense and under favorable conditions will produce a barrier of dentine as protection from irritation. The blood supply to the pulpal tissue is abundant and repairs of this tissue are much like any other connective tissue.

In order to protect the pulpal tissue especially during cavity preparation, the general morphology of the pulp chamber must be kept in mind. Also during cavity preparation caution must be used to prevent the dental tissues from excessive heat.

When speeds of 5,000 rpm or over are used with rotary instruments, a coolant is essential and the water spray is the most efficient. Some of the results of preliminary research done on the effects of other methods of dental cutting have not been too favorable and further study is needed to either validate or discourage their use.

Cavity "sterilization" has been the topic of much of the literature but most of the articles are empirical. To protect the pulpal tissue it would be ideal to sterilize the dentine over the pulp; this cannot be done merely by wiping a drug on a cavity floor. In shallow lesions the cavity preparation may be deep enough to leave only sound and uncontaminated dentine. In deeper cavities, and especially those approximating the pulp, the drug used should be sealed in to be effective. Zinc oxide and eugenol have germicidal and abirritant properties. Promise has been shown by sealing in a paste made of penicillin and camphorated parachlorophenol.

Zinc oxide and eugenol cements not only are soothing to the pulp but have better sealing properties than the others. Using zinc oxide and eugenol cements as liners for silicate cement and self-curing restoration will result in discoloration, so other liners are necessary.

Base plate gutta percha and temporary stopping have poor sealing qualities and are very irritating to the pulp and should not be used as temporary restorations. The self-curing acrylic resins have poor sealing properties and although not irritating to the pulp to any noticeable degree, a base is necessary.

Silver amalgam besides transmitting thermal shock is capable of irritating pulpal tissues in deep cavities and should

be placed over a zinc oxide and eugenol base or cavity liner in less deep cavities.

If the pulpal tissue has not degenerated beyond a certain point, exposures can be handled so that the pulp will remain vital. The exact state of the pulp cannot be determined with present day pulp testers or radiographs and until more accurate means are developed there will be failures. Small exposures may be handled by pulp capping and those with larger involvements need pulpotomies. Today the material most commonly used over amputated pulps is calcium hydroxide but some studies show dentine bridges formed without the calcium ions being present. When pulpal tissue is cariously exposed, the results of the pulpotomy are better if the dentine can be sterilized and the pulp sedated before the amputation is done. Caustic drugs should not be used and a blood clot should be allowed to form over the exposed surface of the remaining pulp tissue.

Journal of Dentistry for Children
Second Quarter 1957

The Use of Porcelain and Plastic Teeth in Opposing Complete Dentures

RICHARD L. MYERSON, B.S., Cambridge, Mass.

The co-use of porcelain teeth for one denture and plastic teeth for the opposing denture presents an interesting compromise of the physical properties of the two materials. The features of the combination of plastic teeth with porcelain teeth are:

It is easy to bring the dentures into occlusion by grinding mainly the plastic teeth.

Wear is not completely eliminated so some accommodation by wear occurs.

The hazard of click and trauma is virtually eliminated because porcelain teeth occlude against plastic teeth.

Because of the yielding character of the plastic teeth, much of the energy of impact is absorbed, and this compensates for the hazard of friability and brittleness of porcelain teeth.

Masticating efficiency is maintained at a higher level than with plastic teeth versus plastic teeth because the mechanical cutting edges of the porcelain teeth will not be lost.

There are simple rules to be followed in using plastic teeth against porcelain teeth. These should be emphasized. The porcelain teeth should present smooth polished surfaces, with no cutting action into the plastic teeth, at all times. This is done best by using a flat cusp type of tooth made of dense porcelain.

This combination of porcelain and plastic teeth represents a compromise. The trauma or click is somewhat greater with the plastic and porcelain combination than with the plastic teeth opposed by plastic teeth. Cutting efficiency is greater than with plastic-against-plastic teeth, but less than porcelain-versus-porcelain teeth.

This is a preliminary report. Further investigation is being carried out in both the clinical and the laboratory aspects of the problem. It has been reported at this time because it is felt that the compromise of the properties of the plastic teeth and porcelain teeth is successfully achieved by their co-use, and that this compromise is worthy of consideration.

The Journal of Prosthetic Dentistry
Vol. 7, No. 5, September 1957

Intensification of Intraoral Roentgenograms by Toning

JACK BUDOWSKY, D.D.S., et al.

In order to evaluate the effectiveness of a toning solution for the intensification of roentgenograms, three roentgenograms in duplicate were taken for each of twenty areas of the mouth (in twenty patients). These films were exposed, developed, and intensified according to various experimental and normal specifications. Evaluation of these films by a panel working independently suggested that, under various conditions in which it may be impossible to obtain other than an underdeveloped or underexposed radiograph, the subsequent use of a toner intensifier is indicated to improve the quality of the available films. In many instances, the image produced will be superior to that in the unintensified state. The intensification process, an inexpensive, readily available, simply performed procedure, is carried out in room light and hence the roentgenogram may be toned to exactly the desired density and contrast. The technique may also prove to be of value in restoring age-faded roentgenograms and as a new specific differential diagnostic aid for hard tissue lesions. Consideration should be given particularly to the use of such an intensifier to permit decreased exposure times of standard x-ray films in order to minimize both operator and patient exposure to radiation.

Oral Surgery, Oral Medicine and Oral Pathology
Vol. 10 — No. 8 — August 1957

Aspiration Before Injection of Dental Local Anaesthetics

S. C. HARRIS, Ph.D., Chicago

Three guiding facts indicate that deliberate aspiration should be practised routinely before injection of dental local anaesthetics. First, dental local anaesthetic solutions injected intravascularly are a hazard to the patient, and on rare occasions, reach a lethal magnitude. Second, when the usual dental injections are practised, the vascular bed will be entered about 32 times per 1,000 injections. Third, unless the plunger of the injection syringe (or cartridge) is slightly but positively withdrawn, the presence of the needle in a blood vessel cannot be known reliably.

Aspiration takes a fraction of a second. At the time of this writing, aspirating cartridge syringes or the "Gabriel" luer-type syringe provide all the convenience of cartridges with the additional advantage of increased safety for the patient.

This procedure affords additional advantages to the dentists in fewer anaesthetic failures, fewer anaesthetic reactions, fewer frights, and opportunity to rinse the injection needles before sterilization.

Journal of Oral Surgery
Vol. 15, No. 4, October 1957

Full Porcelain Veneer Crown

JOHN C. BARTELS, D.M.D.

For many years, the primary thought has been to construct full porcelain veneer crowns with as much bulk of porcelain as possible but with little thought to the requirements for the individual case. By making an accurate analysis of mandibular function, a guide is established for the amount of tooth reduction necessary for full porcelain coverage. By adequate tooth support to the porcelain, the need for bulk of porcelain decreases, and tooth reduction can be kept to a minimum.

By utilizing a chamfer preparation at the labial gingival margin of anterior teeth, excessive tooth reduction can be eliminated, and the porcelain can be laid on the dentine just as the enamel covering has been on the teeth. Soft issue irritation is eliminated by the protective contour of glazed porcelain, and instead of gingival recession, the gingivae will hug the porcelain crown and remain firm and healthy.

Full porcelain veneer crowns can be ground to balanced occlusion by painting the opposite teeth with an oil base pigment, such as Prussian blue thinned with eugenol or thin sweet oil. Coloured paper or cloth interposes bulk between teeth, thus creating a tendency to grind the completed crown out of occlusion.

Journal of Prosthetic Dentistry
Vol. 7 — No. 4 — July 1957

Incidence of Caries at Different Locations on the teeth

JOHN H. BARR, D.D.S., B.Sc.Dent. et al.

The percentage incidence of three types of carious attack — pit or fissure, proximal, and cervical — has been reported for all permanent teeth excepting the third molars for age groups ranging from 13 to 40 years. The data presented should prove useful as a background for caries diagnosis and prognosis and may contribute to an understanding of the caries process. The pattern of attack indicates in general little increment in pit or fissure or in proximal caries experience after 21 years of age, but a progressive cervical attack throughout the age groups studied. No correlation was found between the incidence of the two forms of smooth-surface caries — proximal and cervical. There was a wide divergence in findings for both pit or fissure and for cervical types of lesions when computed with or without assumptions for caries in missing or restored teeth. Studies designed to evaluate potential caries-inhibiting agents should be designed to analyze the effectiveness separately for each type of carious attack and should not include arbitrary assumptions to cover missing teeth. Extensive studies, preferably of the vertical or continuing type, are needed to obtain further information on incremental patterns of carious attacks. This information could have predictive value useful to both clinical researchers and to those attempting the formulation of plans for group dental care.

Journal of Dental Research
Vol. 36, No. 4, August 1957

Radiation Registration becomes Law for Dentists in Illinois

During the course of the 1956-1957 General Assembly of the Illinois Legislature, Senate bills 381 and 382 were passed and signed by Governor Stratton into law. These bills "require the registration of radiation installations" as defined in SB 381 and "authorize the Department of Public Health to investigate and inspect all radiation installations" in Illinois.

Provisions of the Bill.

For the dentist this means:

1. Every operator of a dental x-ray machine must register it with the Director of the Department of Public Health prior to January 1, 1958, and this registration must be made out on a form prescribed by the Department.

2. This registration will be effective until there is any change in the installation which might increase or decrease its output or energy of radiation produced.

3. All dental x-ray installations made after September 1, 1957, must be registered with the Director before such installation is placed in operation.

4. Whenever an operator of a dental x-ray machine discontinues the use of his installation, he is required to register such discontinuance within thirty days, giving written notice to the Director concerning the date of the discontinuance and the final disposition of the x-ray machine.

5. The Department has the right to inspect premises where a dental x-ray is used for the purpose of studying and evaluating its potential hazard to the health of the public.

6. Dentists who fail to comply with these provisions will be guilty of a misdemeanor and upon conviction may be fined not more than $1,000 or be imprisoned in the county jail for not more than six months, or both. Each day that the dentist fails to comply shall constitute a separate offense.

Illinois Dental Journal
Vol. 26, No. 8, August 1957

Histologic Response of Amputated Pulps to Calcium Compounds and Antibiotics

VERDA ELIZABETH JAMES, D.D.S., et al

One hundred and seventy-five teeth of young adults, which were to be extracted because of carious exposures of vital pulps (frequently accompanied by a long history of pain), were used to study the histologic response of human amputated pulps to calcium compounds and antibiotics. The teeth were sedated with zinc oxide and eugenol from one to seven days prior to the pulpotomy procedure. The pulps were covered by one of four calcium compounds, calcium hyroxide, calcium phosphate, calcium carbonate, calcium hydroxide in a methyl cellulose base; one of four antibiotics, penicillin, terramycin, aureomycin, PBSC; or a combination of an antibiotic and a calcium compound. Each specimen was studied histologically and assessed according to the degree of the inflammatory re-

sponse, the incidence of bridging, the incidence of internal resorption, the incidence of internal haemorrhage, and the type of clinical clot.

The pulpal response to the pulpotomy procedures can be evaluated and compared on the basis of the following histologic criteria: severity of inflammation, incidence of bridging, and incidence of internal resorption. The type of clinical clot and the incidence of internal haemorrhage were not correlated with inflammation, bridging, or internal resorption.

Since the number of necrotic pulps found in those subjected to pulpotomy (9 per cent) was statistically similar to those found in the untreated control teeth (10 per cent), it would seem that pulpotomy procedures do not tend to cause pulpal necrosis.

Bridging (35 per cent) occurred under all the materials studied, but in a varying incidence (11 to 69 per cent). Bridging was observed under antibiotics less frequently than under the calcium compounds (23 per cent versus 43 per cent).

Internal resorption was found in 19 per cent of the teeth.

Amputated pulps covered with calcium compounds showed a significantly greater incidence of bridging, a lesser incidence of internal resorption, and less severe inflammation than those covered with one of the antibiotics.

On the basis of this study, amputated pulps covered with a paste of calcium hydroxide in a methyl cellulose base showed more frequent bridging and less resorption than those covered with calcium hydroxide powder.

Of the four antibiotics used, amputated pulps covered with the poly-antibiotic mixture (PBSC) showed the highest incidence in bridging. The group covered with penicillin showed the highest incidence of internal resorption.

When calcium compounds were combined with an antibiotic, the pulpal response resembled that of the antibiotic more closely than the calcium compounds.

There appears to be a direct relationship between the severity of inflammation and the incidence of internal resorption and an inverse relationship between the degree of inflammation and the incidence of bridging.

Oral Surgery, Oral Medicine and Oral Pathology
Vol. 10, No. 9, September 1957

A Practical Approach to Endodontics for the General Practitioner

PAUL K. HILL, D.D.S., Pasadena, Calif.

The treatment of pulpless teeth can be successfully accomplished by the general practitioner of dentistry. Proper equipment, observation of technique and details can make endodontics in general practice simple, practical, remunerative and gratifying.

Recognition and practising of the triad of endodontics should be observed assiduously — namely: (1) Cleansing and proper mechanical preparation of the canal to a round, tapering canal with a minimal apical opening; (2) Filling and sealing of the canal — complete obturation at a point .5 mm from the apex; (3) Sterilization of the canal.

The electro-sterilization method of treating pulpless teeth in general practice is a sound and proven process. It is time-saving and a method in which the operator can place his confidence. Proper observance of strength of current and

time will produce sterile canals with the minimum of post-operative discomfort.

The well-operated and treated pulpless tooth can serve the patient as well as any other member of the dental apparatus. The dental practitioner, in performing this invaluable service, can help prevent the ever-increasing number of dental cripples.

One fact that is always present is that if the operation of a root canal is complete and thorough in all of its aspects, we still have Nature on our side. No method of sterilization or culturing can prove conclusively that all bacteria and irritants are destroyed or removed. The only evaluation of success is the follow up roentgenographic check which reveals a healed area of irritation and the presence of a continuous membrane and lamina dura at the previously disturbed area. Any source of infection or irritation has been removed by a skillful operation and by the body defenses.

Southern California State Dental Association Journal
September 1957

Role of Silver Amalgam in a Modern Dental Practice

JOHN H. MOSTELLER, D.D.S., Mobile, Ala.

Silver amalgam is the most widely used material in operative dentistry, and therefore is employed by dentists with all degrees of ability. A survey has revealed a smaller percentage of failures with amalgam fillings than with fillings made of any other material. Amalgam is well tolerated by the pulp and, although it is a good thermal conductor, the pulp can be protected easily from this thermal conductivity by the use of intermediate base materials.

Studies utilizing radioactive calcium indicate that amalgam comes closest to sealing the tooth cavity hermetically; also no fluid exchange has been demonstrated at the margins of the amalgam fillings that have been in the mouth for any period of time.

Properly manipulated amalgam is a stable material and does not change in size and shape with time. The expansion of the material is under the control of the dentist, and the slight contraction that may occur is of no clinical significance. The flowing characteristic of amalgam appears to have been greatly exaggerated by many, for no one has demonstrated its clinical significance.

Amalgam has little tensile strength, and as near 90 degree angle margins as possible must be established; however, its crushing strength is more than enough to meet the demands of the forces of mastication. It must be mechanically retained intracoronally; thus, it should be used only for those restorations that are supported by the tooth, not for those where the restoration must strengthen the tooth. Corrosion, tarnish, and the so-called "amalgam line" are all results of errors committed by the dentist and are not necessarily physical properties of the material itself. Although a perfunctory technique is responsible for failure with amalgam, it is a relatively easy material to learn to manipulate properly. The use of amalgam in operative dentistry allows the average dentist to render a quality type of service to a large number of patients at less expense per patient and yet enables him to enjoy an income that compares favorably with that enjoyed when gold inlays are used.

The Journal of the American Dental Assoc.
Vol. 55, No. 3, September 1957

EDITORIAL

Attitudes and Aptitudes

One of the most important committees, and one which is peculiar to all dental schools, is the Committee on Admissions. Upon the members of this committee rests the responsibility of selecting from the eligible applicants those whose aptitudes and attitudes are considered most desirable for admission to the dental school and ultimate membership in the profession.

It is important to the prospective dental student, to the dental profession, and to the dental schools that the greatest care be exercised in the selection of students. The dental schools wish to employ their, in the main, inadequate facilities in the most efficient and effective manner possible, and to do this they must select students who are capable of succeeding in the dental education programme and who will prove to be an asset to the profession. If the dental schools are to render the greatest possible service to the public and to the country, they must admit students who possess the scholastic and technical aptitude necessary to succeed in dental school and also possess those attitudes of social consciousness or responsibility which should distinguish the professional man.

If little thought is given to the considerations involved in the selection of applicants, the task does not appear too difficult. However, when all facets of the responsibility are considered, the problem becomes one of great magnitude and causes much soul-searching on the part of Admission Committee members.

Recently we conducted a survey of the five Canadian dental schools in order to determine the various criteria upon which student selection is made. All five schools reported that academic or scholastic standing was, by far, the most important consideration for admission. Three schools reported that professional suitability was also important but we sensed no specific method by which this suitability was determined. Only one school considered manual dexterity because only one school conducts an aptitude test. Three schools effect personal interviews whenever possible, but strangely enough one faculty, which reported that professional suitability was a consideration, did not hold interviews but apparently relied solely upon the character reference supplied by the applicant. Only one school indicated that a character reference was not mandatory and one school replied that two references were required.

It seems most apparent that all faculties in some degree or other are cognizant of the desirability of selecting students who possess those characteristics which enhance their professional suitability. However it is also apparent that no yardstick presently exists by which such traits can be measured. Scholastic ability remains the only measurable quality and therefore weighs very heavily when a

candidate's acceptability is being considered.

Undoubtedly members of Admissions Committees are desirous of possessing as much pertinent information as possible in respect to an applicant, and this then suggests the advisability of developing a broader and more uniform approach to admission procedures. The Council on Dental Education of this Association is considering the possibility of instituting a dental aptitude testing programme. A similar programme has met with significant effectiveness in the United States.

Dr. Shailer Peterson, Secretary of the A.D.A. Council on Dental Education in an address to the W. K. Kellogg Foundation Institute in 1956 stated that:

"Prior to 1946, some schools failed as many as fifty per cent of their freshmen class and the national average for failures was over fifteen per cent for the first year; now ten years later, about four per cent are failed during the first year for all reasons, and the total number lost during the four years is only seven per cent. A programme which helps directly and also indirectly to permit our dental schools to operate with such high efficiency must have considerable merit and should be one of which we can all be proud to have been a part."

The A.D.A. Council in 1946 developed a five year pilot testing programme. At first there was a marked degree of reluctance on the part of some schools to associate themselves with the programme and accept the findings of the aptitude test. But within the five years testing period the schools began to realize the validity of the test and understand how such a programme could benefit them in selecting their students. Now all American dental schools make use of the test scores.

Any aptitude testing programme will undoubtedly have some shortcomings but it is obvious from the acceptance of this programme by the American schools and the indisputable improvement to academic mortality that the tests have been most effective and helpful.

It is our view that such a programme should be instituted in Canada to enable the members of the Admission Committees of the Canadian Schools to discharge their important responsibilities with greater effectiveness.

A Sequel

During the latter part of July we prepared an editorial on the "Future of Fluoridation in Canada", which appeared subsequently in the September issue of the *Journal*. It was predicted that the fluoridation plebiscite in Calgary would fail because of apathy, even though the Calgary Dental Society and the local newspapers had been peerless in their dedicated efforts to acquaint Calgarians with the undisputed merits of this public health procedure.

The *Calgary Herald* reprinted the major portion of the *Journal's* editorial and subsequently reminded the electors in an editorial of its own, that while their previous voting performances left something to be desired, the greatly increased interest in municipal affairs, and the widespread scientific support fluoridation had received would surely prove the *Journal* was overly pessimistic.

On October 16th, 118,000 Calgarians were eligible to exercise their franchise. The result: For fluoridation — 26,158. Against fluoridation, 26,358.

We wish, with all our heart, that the September editorial had indeed been overly pessimistic.

BOOK REVIEW

Clinical Applications of Suggestion & Hypnosis. Prepared by: William T. Heron, M. A., Ph.D. Published by: Charles C. Thomas, Springfield, Illinois. Available from: The Ryerson Press, Toronto. Pages: 165. Price: $4.25.

By virtue of the author's academic background in psychology, his wide experience in the field of clinical hypnosis, and his broad knowledge of the complexities of doctor-patient relationships in the dental environment, his opinions are authoritative and well respected.

The author's purpose is to be as practical as possible, without making the book a how-to-do-it book. He achieves the positive objectives commendably, the negative aspect of his purpose is difficult to adhere to in a subject of this kind. Nevertheless, the chapters on "Methods of Induction" and "Production of Clinical Hypnosis" are written in a most professional, ethical, and acceptable manner.

"The dramatic results one sees the stage hypnotist perform can be produced from the sheerest amateur given a little stage presence and excellent subjects. Since it requires skill to treat individuals in the dental situation, teachers are recommending dental students to acquire basic fundamental knowledge in the psychology of normal human behaviour. Great ingenuity and psychological knowledge needs to be mobilized if suggestions are to be used in any but the most mechanical fashion." Subjects on the psychology of human behaviour are not discussed in any great detail for obvious reasons. Nevertheless, contemporary authorities agree that the above thoughts in quotation cannot be over emphasized.

The author has made an outstanding contribution to this field in which dentists are showing a rapid rate of growing interest.

Gordon J. Fimio.

THE LIBRARY

The Library of the Association consists of practically all the books related to dentistry which have been published during the last ten years. A considerable number of volumes published earlier are also available.

The Library has been made possible through the generosity of interested members of the Association. All monies received are used for the purchase of books. The Association bears the cost of administration.

For the benefit of members and all others interested, the library is open daily from 9.00 a.m. to 5.00 p.m. except Saturdays and Sundays. All dental periodicals are available.

Books may be borrowed by the membership by writing: Librarian, Canadian Dental Association, 234 St. George St., Toronto.

Additions

BUNTING, R. W.: Oral Hygiene. 3rd ed. 1957. 334 p. illus.

DENTAL CLINICS OF NORTH AMERICA: Symposium on emergencies in dental practice. July, 1957, by James R. Cameron. Pages 335-617. illus.

GERSHKOFF, A., and GOLDBERG, N. I.: Implant dentures: indications and procedures. 1957. 256 p. illus.

GILLIES, Sir H., and MILLARD, D. R.: The principles and art of plastic surgery. 1st ed. in two volumes. 1957. 652 p. illus.

HERON, W. T.: Clinical applications of suggestion and hypnosis. 3rd ed. 1957. 165 p.

MILLER, S. C.: Oral diagnosis and treatment (oral medicine). 3rd ed. 1957. 977 p. illus.

P.O.S. PRATIQUE ODONTO-STOMATOLOGIQUE: Volumes IX and X contenant les feuillets parus jusqu'au 30 juin 1957.

SALZMANN, J. A.: Orthodontics: practice and technics. 1957. 497 p. illus.

SALZMANN, J. A.: Orthodontics: principles and prevention. 1957. 381 p. illus.

TAUBER, R.: Basic surgical skills; a manual with appropriate exercises. 1955. 75 p. illus.

THE ASSOCIATION

International Dental Congress at Rome

Approximately 100 Canadian dentists were in attendance at the Rome Congress, September 7-14 last. Some 10,000 persons, in all representing 72 nations, participated in the sessions. A special audience was held in St. Peter's Church by Pope Pius for those present at the Congress on Sunday afternoon, September 8th. His talk was delivered in French and he pointed out recent advances in the field of paedodontics, stressing the importance of prevention of dental diseases in all areas. His Apostolic Blessing was accorded members of the dental profession. Receptions were given by the Mayor, Italian government officials and several of the Embassies. An official banquet, special grand opera performance and grand ball formed the main social events. Several hundred scientific presentations, essays, demonstrations, clinics and exhibits were given during the week, covering all phases of dentistry. Dr. George A. Morgan of Toronto made a presentation on Oral Surgery which was very favorably received. Dr. Thure Brandup-Wognsen of Stockholm was unanimously elected president of the F.D.I. The next Congress will be held at Cologne, Germany, in 1962.

Commission on Survey of Dentistry In the United States

The first meeting of the commission was held at the headquarters of the American Council on Education in Washington, D.C., on August 7th last. Earlier the membership of the new commission was announced, consisting of four members of the dental profession and eleven representing the public. The members are: President Arthur S. Flemming, of Ohio Wesleyan University, who is chairman; Dr. Otto W. Brandhorst, secretary American College of Dentists; Mr. George Bugbee, New York City, president National Health Foundation; Mr. W. Howard Chase, New York City, president, Communications Counselors, Inc.; Miss Anne Fillmore, New York City, general director, National League for Nursing, Inc.; Dr. Williard C. Fleming, San Francisco, dean, School of Dentistry, University of California; Dr. Don W. Gullett, Toronto, secretary, Canadian Dental Association; Dr. Herman E. Hilleboe, Albany, commissioner of health for the State of New York; Chancellor Lawrence A. Kimpton, of the University of Chicago; Mr. Charles P. McCormick, Baltimore, chairman of the board, McCormick & Co.; Mr. Lee W. Minton, Philadelphia, international president, Glass Bottle Blowers' Association of the U.S. and Canada; Chancellor Franklin D. Murphy, of the University of Kansas, Lawrence, Kansas; Dr. Percy T. Phillips, New York City, trustee of the A.D.A.; Mr. Philip N. Powers, Clayton, Mo., president, Internuclear Co., and Mr. Henning W. Prentis Jr., Lancaster, Penn., chairman of the board, Armstrong Cork Co. The Survey will get underway this fall and is expected to take two years at a cost of $400,000. A study will be made of four areas — dental education, dental research, dental practice and dental health. The commission is made up of prominent representatives of industry, business, health, education and labor. The aim is to find means to better and broaden service for the public.

Fluoridation Progress in the United States

1. Minneapolis, population 550,000, began fluoridating public water supplies on August 6th last. The twin city of St. Paul, population 335,000, has had the programme since 1952.
2. Fluoridation programmes are now operating in 1,532 U.S. communities with a total population of 32,319,603 people.
3. A nation-wide Roper Poll of public opinion on fluoridation in U.S. indi-

cated major support for the public health measure. Overall 53 per cent said fluoridation was a good idea; 18 per cent said it was not a good idea and 29 per cent replied "Don't know."

W.H.O. Approves Fluoridation

"The World Health Organization has reported that the use of fluoridated drinking water to prevent tooth decay is safe, effective, and practical. After having studied hundreds of fluoridation programs in 17 countries, a W.H.O. committee has announced that the use of fluorine in drinking water supplies is approved by responsible public-health officials throughout the world.

"In the United States 32 million people in more than 1,500 communities are drinking fluoridated water. Sixteen other countries have begun similar programs.

"The W.H.O. committee report emphasized that results in all nations using fluoridated drinking water show remarkable uniformity. Dental caries in the permanent teeth of children decreased by about 60 per cent, while in children's primary teeth the reductions ranged from 50 to 60 per cent.

"No other public-health procedure has had, during the initial stages of its application, such a background of study in terms of both time and expense, the report said. Without qualification or caution, W.H.O. recommends the use of fluoridated drinking water wherever and whenever possible. It was suggested that treated water contain 1 part of fluorine for every 1 million parts of water."

Les Journées Dentaires Internationales de Paris

The Secretary General of the 31st Journées Dentaires Internationales of Paris cordially invites Association members to attend their congress to be held in Paris November 25th to December 1st next. For information write: — Pierre-André Robert, Secretary-General, 10 rue de l'Isly, Paris-8.

Orthodontic Section

The following is a list of officers for the Orthodontic Section of the Canadian Dental Association, for the year 1957-1958:

Dr. Gerald Franklin, Montreal — Chairman.

Dr. Walter Swiston, Montreal — Secretary-Treasurer.

Dr. Ira Hamilton, Ottawa — Vice-Chairman.

TORONTO FACULTY — ALUMNI DAY

November 29, 1957 **Dental Building—Room 101**

PROGRAMME

A.M.

9:30—10:30 Cases from Oral Diagnosis Department. Presented by staff and students.

10:30—11:00 Intermission.

11:00—11:45 The Dentist—Dental Hygienist Team At Work. (Televised Clinical Demonstration).

P.M.

2:00—2:45 Gold Inlay Procedures. (Televised Table Clinic).

2:45—3:15 Annual Meeting.

3:15—4:00 Progress report on new Dental Building.

Admittance to this programme is free to all Dental Alumni Members.

JOIN YOUR ALUMNI TO-DAY

Secretary—Dr. B. Gross, 816 Bathurst St., Toronto, Ontario.

ECONOMIC SECURITY

Your Home: C M H C Building Standards

Prepared by Information Department of Central Mortgage and Housing Corporation through courtesy of W. Stewart Batos, President.

If the quality of residential construction in Canada has shown a marked improvement over the past decade a large part of the credit can be attributed to the building inspections carried out by Central Mortgage and Housing Corporation. Builders themselves give recognition to this fact and have come to regard CMHC's acceptance as the stamp of good workmanship.

Protection of the lenders' investment is the main purpose behind the compliance check-ups carried out by the Federal government's housing agency, but home owners, of course, also benefit by CMHC inspections.

To explain the purpose and scope of CMHC inspections, it is necessary to go back to 1935 when the first Federal housing act was passed. This legislation was enacted principally to encourage, by government assistance, the building of more houses then would otherwise be constructed and indirectly, through the building of these houses, to reduce the unemployment then existing. A secondary objective was to improve the quality of new housing in Canada by requiring adherence to a set of building standards as a condition of a government assisted loan. It was with this objective in mind that NHA building standards were prepared and their implementation gave rise to the now familiar CMHC inspection system.

Under the present housing legislation, the National Housing Act, 1954, the Corporation is authorized to insure loans made by approved lenders which include banks, life insurance and trust and loan companies.

One of the conditions of an insured loan is that construction of the house be carried out in reasonable conformity with the approved plans and specifications and in accordance with NHA building standards. To ensure that these building requirements are observed, the Corporation carries out five inspections during the construction period.

The first inspection takes place when the excavation is complete and ready for footings and foundations. Location of the excavation on the lot, soil bearing qualities and drainage are some of the points checked at this stage.

The inspector returns for a second inspection when the footings are in and the foundation walls completed but not backfilled. He checks the size and location of footings and foundations, the quality of workmanship and materials, damp-proofing and foundation drainage.

The third inspection is carried out when the structure is framed and roofed, but before exterior finish is applied. A check is made of the construction of the framing, supports, arrangements of partitions, exterior wall sheathing, roof sheathing and roofing material.

Before the fourth inspection is made the structure is enclosed and the roughing-in for heating, plumbing and electrical work is in place. Insulation should be

installed and the walls and partitions ready to receive the lath but not yet lathed. The inspector checks insulation and vapour barriers, door and window framing, and any other framing that may not have been completed at the previous inspection. Arrangements for future installation of fixtures, rough plumbing and electrical wiring are also inspected at this time. He must look for possible strength reduction caused by cutting of the framing to allow passage of plumbing, electrical wiring or heating ducts.

The final inspection takes place when the building is completed. This is a foundation-to-roof check and includes painting, flashing, heating, wiring, cabinet work, hardware, glass, flooring and walks. Such items as grading, garage and site improvement are also checked if these are part of the original specifications.

At the time the loan is approved, the borrower is given a set of "Request for Inspection" postcards. These cards are mailed to the local CMHC office as building progresses to indicate the date on which the house is expected to reach the appropriate stage of construction for inspection. Work must be left uncovered until the inspection has been made. If work has gone beyond the point where it can be inspected properly, it must be uncovered or no further loan advances can be made.

The borrower should mail each card well in advance of the date he desires inspection to allow for mailing time and the scheduling of inspector's duties.

A winter "on call" service started in 1955 helps avoid inconvenient construction delays. During the winter, the first inspection may be requested by telephone. By avoiding delays at this important stage of inspection, the risk of frost penetration in the excavation is greatly diminished and thus potential damage to footing and foundation is reduced.

Following each inspection, a copy of the inspector's report, listing any departures from the building standards and approved plans and specifications, is given to the builder on the job. Two copies are sent to the lender who forwards one copy to the borrower requesting correction of the infractions. If the infractions are not corrected within a reasonable length of time, insurance on the next instalment of the loan may be withheld until the required corrections are made. The total insurable loan may be reduced if no action is taken.

In this connection, something might be said about the importance of detailed building contracts between borrowers and their contractors. Such contracts should set out the following: agreed price and method of payment, a specfiied period for completion, working drawings and specifications, the rights and responsibilities of both parties, guarantee bonds, methods for settlement for incomplete or unsatisfactory work, liability insurance, fire insurance and any other details which the borrower's solicitor might advise.

Since loans can be reduced for infractions a borrower who does not have this type of contract with his builder might find his loan reduced and have no legal means of redress.

While CMHC inspections give the borrower some assurance that the house is properly constructed, these inspections cannot be regarded as complete architectural supervision of construction. The Corporation points out that while the house may be satisfactory to CMHC for mortgage insurance purposes it may not be acceptable to the borrower in that the contractor is not fulfilling the terms of his contract. The final responsibility rests with the borrower to see that the contractor meets all obligations of the agreement.

Similarly, when buying an NHA house from a commercial builder, it is the responsibility of the purchaser to check on quality of construction. He should also request a copy of the specifications to ensure that the house he gets incorporates all the features agreed upon. It would be wise for purchasers to make some definite arrangement with the builder about correcting construction defects which may appear in the house after completion.

THE CORPS

The results of the General Efficiency Competition of the Royal Canadian Dental Corps (Militia) for the training year 1956-57 are announced as follows:

No. 50 Dental Unit Canadian Army (Militia) with headquarters at Halifax, N.S., Commanding Officer, Lieutenant-Colonel F. C. Fennell has been judged the winner of the Competition and awarded the Moore Trophy. The Moore Trophy is awarded annually to the Unit in the Royal Canadian Dental Corps (Militia) judged the most efficient. It was donated by Lieutenant-Colonel Stephen A. Moore, C.D., F.I.C.D., the first Honorary Lieutenant-Colonel of the Corps.

No. 54 Dental Unit Canadian Army (Militia) with headquarters at Ottawa, Ontario, Commanding Officer, Lieutenant-Colonel C. E. Woods, has been judged the runner-up in the Competition and awarded the Trelford Trophy. The Trelford Trophy is awarded annually to the runner-up of the Moore Trophy. It was donated by former officers of No. 1 Company, Canadian Dental Corps, in honor of Lieutenant-Colonel W. G. Trelford, V.D., who commanded that unit as the first dental unit to proceed overseas in the Second World War.

No. 60 Dental Unit Canadian Army (Militia) with headquarters at Edmonton, Alberta, Commanding Officer, Lieutenant-Colonel G. E. Decker, has been judged the unit which made the most progress in general efficiency during the training year and awarded the Saskatchewan Dental Association Memorial Trophy. The Saskatchewan Dental Association Memorial Trophy is awarded annually to the unit showing the greatest improvement in general efficiency during the year. It was donated by the Saskatchewan Dental Association in memory of its members who made the supreme sacrifice in the Second World War.

The Corps regrets the sudden death of Lieutenant-Colonel F. J. MacLean, C.D., at London, Ontario. Lieutenant-Colonel MacLean was formerly Command Dental Officer at Prairie Command. He retired from the R.C.D.C. April 30, 1957, and was employed by the Corps as a civilian in London, Ont. Military honors were accorded Lieutenant-Colonel MacLean at his interment in Toronto, August 14, 1957. The Director General of Dental Services was represented by Colonel W. E. Meldrum, O.B.E., C.D. Honorary Pallbearers were:

Colonel J. A. MacGowan, C.D.; Lieutenant-Colonel W. R. Cunningham, C.D.; Lieutenant-Colonel B. P. Kearney, M.B.E., C.D.; Major G. C. Evans; Major S. G. Bagnall, C.D.; Major G. L. Finkbeiner, C.D.; Major L. G. Craigie; Major J. G. Andrews.

The following officers have appeared in the programmes of recent professional association meetings:

Colonel G. B. Shillington — Eastern Ontario Dental Association, La Société Dentaire de Montréal.

Lieutenant-Colonel G. R. Covey — Montreal Fall Clinic.

Lieutenant-Colonel T. L. Marsh — Montreal Dental Nurses' and Assistants' Association.

Major G. C. Evans — Montreal Dental Nurses' and Assistants' Association, Montreal Fall Clinic.

Major H. W. Hart — Dental Nurses' and Assistants' Eastern Ontario Dental Association.

Major D. H. Protheroe, formerly dental officer at Headquarters, Esquimalt Garrison, is attending a course in Dental Public Health at the University of Michigan, U.S.A., from September, 1957 to May, 1958. Major Protheroe is a former Royal Canadian Air Force officer from the Second World War. He was awarded the D.F.C. for gallantry while in Command of a Royal Canadian Air Force Bomber on overseas duty. On release from the Royal Canadian Air Force, he attended the University of Alberta, graduating in 1950. On graduation he was posted to 11 Dental Company, Royal Canadian Dental Corps, Western Command, and served in various clinics until posted to Korea in May of 1954. On return from the Far East he was posted to 11 Dental Company, Royal Canadian Dental Corps, Western Command.

Major P. S. Sills and Captain D. E. Williams have completed their tour of duty with the United Nations Emergency Force, Middle East, and will be returning to Canada shortly; Major Sills will be returning for duty with the R.C.A.F. at Trenton, Ontario. Captain Williams is to be employed at Camp Gagetown, New Brunswick. They will be replaced by Major H. R. Kettyls, Captain K. N. Munro and Captain R. G. Perry.

Major H. R. Kettyls has been employed at the Royal Canadian Air Force Station,

Claresholm, Alberta. Major Kettyls is a veteran Royal Canadian Air Force Pilot of the Second World War.

Captain K. N. Munro enrolled in the Canadian Army (Regular) under Regular Officer Training Plan in 1952, graduating from the University of Toronto in 1955. On graduation he was posted to 13 Dental Company, Royal Canadian Dental Corps, Central Command, and is at present employed in the R.C.A.F. clinic, Trenton, Ontario.

Captain R. G. Perry enrolled in the Canadian Army (Regular) under Regular Officer Training Plan in 1952, graduating from the University of Alberta in 1955. On graduation he was posted to 14 Dental Company, Royal Canadian Dental Corps, Prairie Command. Recently he served in dental clinics at Headquarters, Camp Shilo and Command Headquarters in Winnipeg.

Major F. M. Murray who retired on September 24, 1957, was born on October 15, 1901, in London, Ontario. After graduating from the University of Oregon, U.S.A., in 1925, he took up practice in Calgary, Alberta. He enrolled in the Canadian Army on August 9, 1940, and retired in October, 1945. He was re-appointed to the Corps in September, 1947, and has served in Western Command since that date. Major Murray will continue to be employed by the Corps in a civilian capacity at Esquimalt, B.C.

Lieutenant-Colonel J. M. Gabriel who retired on September 15, 1957, was born on August 10, 1899, in Mulmur Township, Ontario. He attended the University of Toronto, graduating in 1924. He is a veteran of both wars, having served overseas on both occasions. In the Second World War he enlisted on July 15, 1940, and served until November, 1945, at which time he was released to take up civilian practice. He was re-appointed in September, 1947, and has served in various commands in Canada.

THE PROVINCES

Alberta

Edmonton and District Dental Society

The first fall meeting of the Edmonton and District Dental Society was held on Tuesday, October 1st with Dr. Gordon Geldart presiding. Afternoon clinics were presented by: Dr. B. McKenzie on the use of stainless steel crowns in children's dentistry; Drs. N. Basaraba and R. Tegart on space maintainers using preformed bands and welded bands; Dr. C. Castaldi on the relation of amalgam fillings to the anatomy of children's teeth.

Guests at the meeting were dental students George Cherewan and Roy Tsuijuki, winners of the Society's annual award for first and third year students. Dr. W. Scott Hamilton introduced the speaker for the evening, Dr. C. Castaldi, professor of Paedodontics at the University of Alberta, who came here from the University of Indiana. Dr. Castaldi presented an interesting paper on his researches into the use of matrix bands and matrix holders in the contouring of amalgam fillings. He showed conclusively that the type of holder made little difference to the result but that contouring of the band and particularly wedging were most effective. Removal of the gingival overhang by running floss through was effective after one minute and up to four minutes after insertion but not later.

The society welcomed as new members Dr. Douglas McDougal and Dr. C. Castaldi and then heard a report on fluoridation given by Dr. J. Calvert. Dr. R. Sills' committee has collected much literature and has speakers ready for any community groups who ask for their help. Welfare organizations and clubs in the city have endorsed fluoridation and commended the dentists in their efforts to inform the public. The Edmonton Junior Chamber of Commerce was working to bring out the vote in the plebiscite on October 16th.

Ladies' night was planned for October 18th and curling for the dentists was arranged for every Wednesday afternoon starting October 30th. G.C.

British Columbia

Vancouver and District Dental Society

Cocktails preceded the inaugural meeting of the season in the Banquet Room of the Hotel Vancouver on October 1, when the new president, Dr. John G. Ryan, welcomed a large attendance. Head table guests, including the new executive members, were introduced, and also Mr. Jack Crompton, President of the B.C. Laboratory Association, whose members were invited to the prosthetic clinics of the day.

The distinguished lecturer was Dr. Frank Lott, formerly Professor of Prosthodontics at the University of Toronto, and Director-General of the Royal Canadian Dental Corps, now Professor and Head of the Department of Prosthodontics at the University of Southern California. His afternoon subject was "Registration of Mandibular Positions and Movements".

The speaker was introduced to the evening gathering by Dr. Robert Scharff, who stated that Dr. Lott was internationally renowned for his organization of the autonomous Canadian Dental Corps — the only one of its kind in the world. Dr. Lott spoke at some length on "The Laws of Occlusion and the Selection of Artificial Posterior Teeth". Dr. George Darts in thanking the lecturer at the close of the evening, recalled Dr. Lott's previous presence in Vancouver in 1938 at the Pacific Coast Dental Conference when he presented an original clinic on glass dentures.

Victoria and District Dental Society

Under the presidency of Dr. T. W. James, the season started well in September when forty members and guests gathered at the Empress Hotel to hear Dr. Lyle Ostlund of Everett, Washington, discourse on "Amalgam Failures, with Suggestions for their Correction". After an introduction by Dr. R. L. Horne, he illustrated the pitfalls which so often beset us, aided by slides of models and line drawings. Dr. Ostlund, who is a perfectionist, held attention to the last word, and left everyone in a humble frame of mind. This was an essentially practical lecture, and its appreciation by the audience was suitably expressed by Dr. Gunning. After an interesting short film showing the work of the Red Feather organization, the usual business meeting was held.

Fraser Valley Dental Society

The first fall meeting took place at Whalley on September 19 with 26 members present. Contributing a great deal to the success of the evening was the guest speaker, Dr. Ralph Yorsh of Vancouver. On this occasion he spoke on "Practice Management" and his presentation was heard attentively by the society members.

B.C. Dental Association

Plans are under way for the annual convention to be held in the Hotel Vancouver, May 1, 2 and 3. Dr. Norman Ferguson of New Westminster is the Convention Chairman and he is already burning the midnight oil making arrangements.

Public Relations, always a paramount subject in B.C., is looked after by Dr. Douglas Yeo who has announced plans for the Dental Health Week to be held in February. Letters were sent to some 50 committee chairmen in the various organizations, asking that dental items of interest be turned over to his committee for newspaper publicity material. Some 2,000 copies of a brief urging the establishing of a dental faculty at U.B.C. were sent out to key people in British Columbia. As a result, about 25 editorials in favor appeared in different newspapers. A pamphlet library begun last year is in operation to provide information to dental students, nurses and health organizations.

D. H. M.

Manitoba

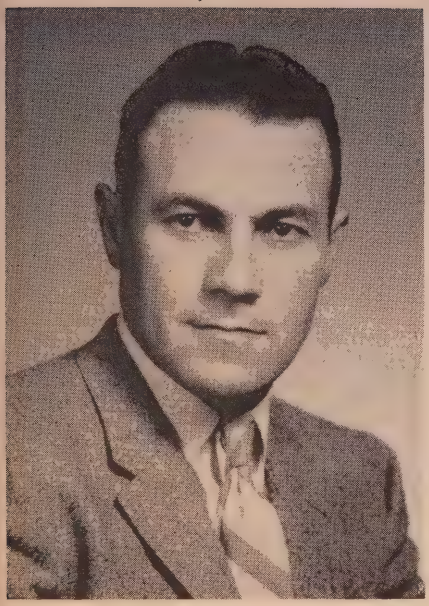
"Director of Dental Services For The Winnipeg Schools"

Another forward step for Manitoba dentistry was recently achieved with the appointment of Dr. C. H. McCormick as the full-time Director of Dental Services for the Winnipeg School District.

It is hoped that this will mark the beginning of a much more comprehensive program for the dental care of children who otherwise might be neglected.

In the past years, due to lack of money and shortage of trained personnel, only a small percentage of the necessary work has been accomplished. The Winnipeg Dental Society has been concerned and felt that much more could be done. A voluntary survey of the school children was made by Society members several years ago, and the result of this proved the great need present — both for corrective and for preventive work.

However, the city did not feel that they could provide funds to tackle the job properly, with the result that things have gone along on a part-time basis for years. During



DR. CLIFFORD H. McCORMICK,

Director of Dental Services, City of Winnipeg.

the past few months the Health Committee of the School Board finally did become concerned and asked the Society for further recommendations as to how to alleviate the situation.

A committee from the Society met several times with the Health body and convinced them that the first step would be to appoint a full time director with a sufficient salary to attract a properly qualified man to the job. This was done and it has resulted in Dr. McCormick's appointment.

Dr. McCormick is a graduate of the University of Alberta. He served with the Canadian Dental Corps in Canada and abroad. He was employed by the Manitoba Dental Services for a period and received valuable experience there with Dr. Arthur Schwartz, Provincial Director of Dental Services. He then spent some time at the University of Toronto where he received his Diploma in Dental Public Health. With this background in dentistry, Dr. McCormick should be able to contribute much in the planning and development of a proper school dental service.

J. P. B.

The 1957 Convention in Retrospect

The planning phase of any convention, through the necessity of many meetings, becomes tedious. During the actual convention the innumerable details to be looked after and the hectic pace required to attend all the functions, makes the time pass all too quickly. Therefore, it seems that only now — several weeks after it is all over, can one relax, look back and take time to think about how things went. And, looking back to June 23rd, a few highlights do seem to stand out.

First of all, came the unanticipated large attendance, representing practically every Province in Canada and quite a few American States. A breakdown of the registration showed the following figures:

	registrants
Manitoba	201
Ontario	79
Saskatchewan	53
Alberta	46
British Columbia	12
Quebec	6
Nova Scotia	3
New Brunswick	1
Newfoundland	1
American	25
Ladies	250

This large attendance caused quite an additional strain on the registration desk, but it certainly eased any financial worries for the convention committee. The country-wide representation also made for an excellent intermingling and exchange of ideas, both professionally and socially.

This intermingling was further enhanced by another of our highlights — "Hospitality Night." This was the first attempt at anything of this nature at a Canadian Dental Convention, and there was a certain amount of pessimism about the whole idea. However, this committee did a wonderful job of selling it to everybody, and through the excellent co-operation of both the Winnipeg hosts and the out-of-town guests, it turned out to be an unqualified success. Judging from the numerous comments heard throughout the rest of the convention and the many thank-you letters received by the Winnipeg hosts, this night alone was enough to make our convention one to be remembered.

However, there were other "firsts" that will also be remembered, including the University of Manitoba Convocation honoring Drs. Balding, Garvin and Timmons. This added an academic and international flavor to the convention and indirectly gave us two

immensely interesting talks on the state of dentistry in England and the United States.

There was also the awarding of an honorary membership in The Canadian Dental Association to a man outside our profession — Dr. Hutton, of Brantford, who so richly deserved this honor through his fluoridation work.

Then, there were the outstanding lectures and demonstrations given by all of the featured speakers. The prime purpose in going to any convention is, after all, to gain knowledge, and this purpose should certainly have been fulfilled. Each man had a message and proved capable of delivering it; capacity audiences at all sessions showed the keen interest and desire of all members to partake of these "words of wisdom."

Once these intellectual desires were satisfied, there came something to satisfy the social desires and fittingly provide a climax to the convention — that is, the President's Banquet and Dance. The colorfulness of the decorations, menu and flowers, the oratory of the speakers, the unusualness of the girl violinists as entertainment all seemed to create a wonderful atmosphere for enjoyment. As an extra feature the variety programme put on by the Winnipeg wives added much to this enjoyment. The girls had practised many hours for these few minutes, but the enthusiastic reception accorded their efforts must have amply repaid them. It seemed to provide a fitting finale to the convention.

J. P. B.

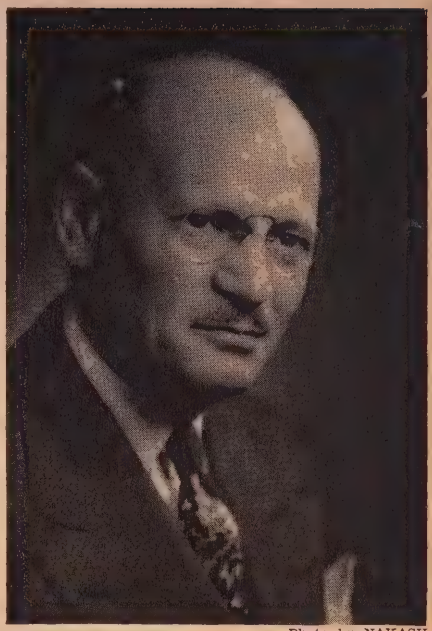


Photo by NAKASH

DR. A. S. SOLOMON

Quebec

Dr. Arthur S. Solomon

Dr. Arthur S. Solomon died at the Jewish General Hospital Thursday, September 20th after a short illness.

Doctor Solomon graduated from McGill University in 1913 with the degree of Doctor of Dental Surgery. After graduation he carried on post-graduate studies in the University of Pennsylvania for some time. He then returned to Montreal where he was active in the practice of dentistry until his recent illness.

Throughout his career he contributed much to his profession and to the welfare of the community. He was the author of professional articles and presented many clinics and lectures before various dental societies.

He was one of the founders of the Mount Royal Dental Society in 1921 and maintained an active interest in it throughout his life. In 1953 he was elected an Honorary Member of the Society in *"recognition of his constant devotion to dentistry and to this Society, of which he was the first president."*

He was elected an honorary member of the international dental fraternity, Alpha Omega, at their convention in Detroit in 1954.

He was on the staff of the Jewish General Hospital since its establishment in 1934 and was appointed senior dental surgeon to the hospital in 1952. He was one of the few who organized and established a dental clinic in the Herzl Dispensary, The Mount Sinai Sanitarium in Prefontaine and the Montreal Hebrew Orphans' Home.

Dr. Solomon was honorary chairman of the dental division of the Combined Jewish Appeal and was on the executive of the Canadian Friends of the Hebrew University.

He was an active Zionist and only recently made a trip to Israel.

He was a member of the Elm Ridge Golf and Country Club.

He is survived by his wife, Anne Tarsches, formerly of Albany, New York; a son, Herbert; and a daughter, Mildred. He is also survived by one brother and three sisters.

G. F.

Montreal Dental Club

Close to 35 golf-minded members of the Montreal Dental Club arrived at the Rosemere Golf and Country Club near Montreal for the Annual Fall Golf Tournament held on Friday, October 4th. The overcast sky at tee-off time gave way to pleasant sunshine, enhancing the fading fall colors as members played the back 9.

Low gross honors went to Dr. Len Kent Jr., with perennial "bridesmaid" Dr. Bob Harvey a close second. Dr. Art Walsh won the low net prize and Dr. Ed Mollot the second low net.

The tournament, characterized by fellowship and friendly rivalry, was climaxed by the evening dinner and the awarding of the prizes.

To the co-chairmen Drs. Len Kent Jr. and Whitey Schutz, our special thanks for another pleasant golf outing.

Saskatchewan

Saskatoon Dental Society

The Society, under President K. Epstein, commenced this season with the Extension Course from the University of Illinois. This year, instead of using the telephone hook up system, slides and commentary system was used. There is a distinct advantage in this form of presentation.

The subject considered was "Current Advances in Dentistry" and was well received.

The officers for this year are, President, Dr. K. Epstein; Vice-president, Dr. C. Halliday; and Secretary-Treasurer, Dr. S. Fielding.

L. D. H.

Saskatoon and District Dental Society

On Friday, Sept. 20th, Dr. R. S. Locke, associate professor of anaesthesia at the University of Toronto, presented a clinic to the Saskatoon and District Dental Society. The subject of the clinic was the use of amnesic, analgesic, and anaesthetic drugs in the control of the unmanageable patient.

Dr. Locke demonstrated by lecture and film, how with the proper use of these drugs the extremely nervous patient may be rendered cooperative in the general practitioner's office. The techniques illustrated will prove of great benefit to those who gathered for the clinic.

As well as a clinician, Dr. Locke was welcomed as a friend for he had previously practised in Saskatoon. We were all pleased to renew old acquaintances and to benefit from his knowledge.

Dinner was served and the clinic concluded with a film and discussion.

Dr. S. Gelmon thanked Dr. Locke for his presentation.

L. D. H.

Ontario

London Dental Society

A group of London dentists, members of the Orthodontic Study Club of the London Dental Society, recently travelled to Atlanta, Georgia. They were invited by the American Society of Dentistry for Children (Georgia Unit) to present a seminar on "Interceptive Orthodontics (system of diagnosis) for the General Practitioner".

This course is designed to acquaint the general practitioner in dentistry with a system of diagnosis and treatment which will help some cases that otherwise would develop into severe orthodontic problems. Early recognition is the keynote to the successful application of the principles as presented by this group.

The practising dentists who took this trip were: Drs. P. E. Currie, J. A. Guest, J. G. Millar, J. A. Reid, J. B. Taylor, and R. J. Wainwright. London orthodontists, Drs. D. C. Way and D. A. Campbell, also accompanied them.

Eastern Ontario Dental Association

At the recent Convention of the E.O.D.A., the following officers were elected:

Past-president — Dr. W. C. G. Collins.

President — Dr. H. A. Stewart.

Vice-president — Dr. A. Slone.

Secretary — Dr. J. D. Lyon.

Auditors — Dr. Lorne E. MacLachlan; Dr. Ira W. Hamilton.

J. D. L.

Rideau District Dental Society

As a result of the recent election of officers for the Rideau District Dental Society, the following executive was elected: President, Dr. R. W. Pickering, Almonte, Ontario, and Secretary, Dr. C. W. Burnett, Smiths Falls, Ontario.

C. W. B.

CORRESPONDENCE

Dear Dr. Dunn:

It is a great pleasure for me to tell you that fluoridation of water supply of Buenos Aires, (the largest city of Latin America) was approved just yesterday by the government.

Cordially yours,
Dr. Simon Katz
Centenera 124 lo C (Suc. 24)
Buenos Aires, Argentina

October 3, 1957

Dear Dr. Dunn:

May I compliment you on your excellent editorial, "The Future of Fluoridation in Canada." It is extremely well done.

Sincerely yours,
Philip E. Blackerby, Jr.,
Director, Division of Dentistry,
W. K. Kellogg Foundation,
Battle Creek, Michigan, U.S.A.

October 7, 1957

IN MEMORIAM

Donald Alfred Pringle McKay — Dr. Donald Alfred Pringle McKay, of Winnipeg, Manitoba, died Friday, September 27th at the Winnipeg General Hospital, at the age of seventy-three.

Born at Kildonan in 1884, Dr. McKay was descended from an old Red River family. His grandfather, William McKay, was a Hudson's Bay Company employee for many years and his other grandfather, Donald Polson, came to the Red River colony with the Selkirk settlers. He was educated in Winnipeg and graduated in 1913 from the Royal College of Dental Surgeons in Toronto. He practised continuously in Winnipeg, except for the years of World War One, when he served with the dental corps of the Canadian Expeditionary Force. He went overseas in 1916 with the rank of Captain, and also served for a time with the army of occupation.

He was an honorary life member of The Manitoba Dental Association, a member of The Winnipeg Dental Society and of The Canadian Club.

He is survived by his widow, Vera, and one son, Grant.

Bernard Johnson — Dr. Bernard Johnson died in September in Calgary, Alberta, following a brief illness.

Dr. Johnson was born in Baldur, Man., and educated in Winnipeg. He served overseas during the First World War and was wounded. He returned to Canada and entered the University of Toronto, graduating in 1927 with a degree in dentistry.

He began practising in Turner Valley in 1930 and moved to Calgary in 1934. During the Second World War he served with the Dental Corps. Dr. Johnson was a member of Corinthian Lodge 22, AF and AM, GRA; the Glencoe Club and Central United Church.

He is survived by his wife, Thelma; two daughters, Marilyn and Thelma; two sisters and one brother.

William George Neilson — Dr. William George Neilson of Coleman, Alberta, died on September 1st, 1957, in Calgary Hospital. He was 67.

Born in Beaver Mouth, B.C., he graduated from the Chicago College of Dental Surgery in 1917. He practised in Bassano in 1918 before moving his practice to Coleman. He moved from Coleman to Calgary in 1924, where he resided up to the time of his death.

Theodore Nelson Belden — Dr. Theodore Nelson Belden, of Winnipeg, Manitoba, died on Sunday, September 22nd, in Winnipeg General Hospital after a lengthy illness. Dr. Belden was fifty-five years of age.

He was born in Winnipeg, son of the late Mr. and Mrs. James Belden. He received his early education in Winnipeg schools and later entered the dental college at the University of Toronto. He graduated from there in 1926 and set up practice in Winnipeg. He continued to practise until December, 1956.

Dr. Belden was a member of the Manitoba Dental Association, the Winnipeg Dental Society, a charter member of the Optimist

Club of Winnipeg, and a life member of the Winnipeg Canoe Club.

He is survived by his widow, Helen; three sons, James, Geoffrey and Michael; two brothers, Dr. Wilfrid A., Winnipeg, Selwyn R., Vancouver.

Howard Ernest Bedingfield — Dr. Howard Ernest Bedingfield, pioneer dentist of southern Alberta, died in September, 1957, following a long illness.

Dr. Bedingfield was born at Kemptville, Ontario. He graduated from the University of Toronto Dental School and took a post graduate dental course in the University of Chicago. In 1904 he went out West and opened his office in High River where he resided for over 50 years. He was the first dentist to establish a practice between Calgary and Macleod. In the early years he visited a number of towns which were without a resident dentist, and had a large local territory to serve.

Dr. Bedingfield was not only a pioneer in his profession but also in bringing the musicians of the district together. He organized and directed High River's first band and continued to direct it for ten years. He gave much time to public service and in the twenties he served for some years as Mayor of the town. He was also elected to the school board and served for several terms. Dr. Bedingfield was an Honorary member of the Calgary Dental Association and also the Alberta Dental Association.

He was a member and past president of Cornerstone Lodge A.F. and A.M. and was possessor of the 50-year jewel. He was also first principal of Golden West Chapter. He was very active in connection with St. Benedict's Anglican church, serving in many capacities. Active also in the Fish and Game Association since its organization, he served as president and in other offices of the branch.

Dr. Bedingfield's life-time hobby was stamp collecting and he was a member and recent vice-president of the Calgary branch of the Philatelist Association. He was also keen on hunting and fishing.

Surviving are his wife, Leila, two daughters, Mrs. E. Lower, and Mrs. R. V. Moore, five grandchildren, and one sister, Mrs. J. Malcolm.

G. Ross Gibson — Dr. G. Ross Gibson of Medicine Hat, Alberta, died in September, 1957. He was 58 years old.

Dr. Gibson was a well known city dentist and was active for several years in service clubs and curling. He was a director of the Alberta Hotel Board, a charter member of the Medicine Hat Kinsmen Club and a director of the Kiwanis Club.

Stanley Arthur Earl Merritt — Dr. Stanley Arthur Earl Merritt died suddenly in September, 1957, at the age of 50.

Dr. Merritt was born in Toronto and received his early education at Humberside Collegiate, and later graduated from the University of Toronto in 1932. From 1932 to 1933 he practised in St. John's, Newfoundland, and from 1933 to 1957 in Toronto.

Dr. Merritt served two years in the Canadian Officers Corps, 1926-1927 and was Captain in the Canadian Dental Corps, 1943-46 in World War Two.

Clifton Holland Beer — Dr. Clifton Holland Beer died on August 17th. He was in his 78th year.

Dr. Beer was born in Charlottetown, P.E.I., in 1880 where he received his early education. Later he enrolled at Indiana University where he was granted his degree of Doctor of Dental Surgery. Dr. Beer practised in Louisville, Ky., before returning to his native city where he continued to practise for a period of fifty years.

He was one of the founders of the Charlottetown Men's Club, a charter member of the Golf Club, a member of the Masonic Order and the Oddfellow's. During his active years he was a keen sportsman and devoted much of his leisure time to hunting and fishing.

Failing health forced Dr. Beer to give up his practice in 1951. He lived in various places since that time and finally returned to his native province in 1954.

Dr. Beer is survived by his son, Robert M. Beer, and one brother, Fred, of Los Angeles.

A. Ross Currie — Dr. A. Ross Currie died at his home in Richmond, N.B., in August, 1957. He was 78 years of age.

Dr. Currie was born in Richmond, N.B. He graduated from Philadelphia Dental College and had only been in practice for a few years when World War I broke out. He joined the Army Dental Corps and saw service in France. After the war he went to the West Coast and practised first in Everett, Washington, and later in Vancouver. For a time he was in the public health service in British Columbia, supervising dental work in schools.

Dr. Currie had been retired for several years but continued to take a keen interest in community and church work. He was one of the pioneers in work for retarded children.

Surviving are his wife, Jean, one son, Alfred, four brothers, Robert, John, Waldo, and Allan, two sisters, Clara and Martha, and three grandchildren.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th—8th
1959	Halifax, Nova Scotia	June 21st—24th
1960	Ottawa, Ontario	Sept. 25th—28th
1961	Saskatoon, Saskatchewan	June 25th—28th
1967	Toronto, Ontario *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Nov. 28, 1957	Toronto Academy of Dentistry Winter Clinic	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow	2298 Yonge St., Toronto, Ont.
Dec. 9-13, 1957	Greater New York Dental Meeting	Hotel Statler, New York	Dr. C. A. LaBorne, Sec.-Treas.	Hotel Statler, Room 106A.
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings	Osler Hall, Huron St., Toronto	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Toronto Academy of Dentistry Dinner Dance	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary	2298 Yonge St., Toronto, Ont.

SHORT GRADUATE COURSE

UNIVERSITY OF TORONTO, FACULTY OF DENTISTRY

Endodontics—December 2–6, 1957—Enrolment Limit 8. Fee $100. In charge: Dr. G. C. Hare.
Orthodontics—Mar. 10–14, 1958—Enrolment Limit 12. Fee $100. In charge: Dr. D. G. Woodside.
Dental Oral Surgery and Anaesthesia—April 21–25, 1958—Enrolment Limit 12. Fee $100. In charge: Dr. J. H. Johnson.
Please address enquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

TUFTS UNIVERSITY—SCHOOL OF DENTAL MEDICINE

Refresher Courses:
1. Oral Medicine—Nov. 25–27, 1957.
2. Full Denture Implants—Jan. 6–10, 1958
3. Occlusal Equilibration—Feb. 10–12, 1958
4. Periodontology—Apr. 14–18, 1958

For further information and application write to: Director of Graduate and Postgraduate Studies, Tufts University School of Dental Medicine, 138 Harrison Ave., Boston, Mass.

UNIVERSITY OF ALABAMA—SCHOOL OF DENTISTRY

Refresher courses in the following subjects will be held during the months of December and January 1957–58:
1. Emergency Care in Dental Practice
2. Laboratory Techniques
3. Practical X-Ray Technique and Interpretation
4. High Speed Technique in Operative Dentistry
5. Immediate Root Canal Therapy followed by Apicoectomy.
6. The Management of Pain in Dental Practice.

For further information and application write to: Dr. A. H. Wuehrmann, Associate Dean & Director Refresher Course Program, University of Alabama, School of Dentistry, 1919—7th Avenue South, Birmingham 3, Alabama.

TEMPLE UNIVERSITY SCHOOL OF DENTISTRY

Post Graduate courses in the following subjects will be held during the months of January to June, 1958:
1. Full Denture Construction
2. Advanced Denture Construction
3. Advanced Orthodontics
4. Periodontal Prosthesis
5. Practice Administration
6. Practical Uses of Electrosurgery in Dentistry
7. Oral Medicine
8. Advanced Surgical Technique in Periodontal Therapy
9. The Washed Field Technique in Accelerated Dentistry
10. Endodontics—Immediate Root Resection
11. The Porcelain Jacket Crown

For complete details of these courses, all of limited enrolment, please write to: Postgraduate Division, School of Dentistry, Temple University, Broad above Allegheny, Philadelphia 40, Pa.

RESEARCH FELLOWSHIPS AVAILABLE

Tufts University School of Dental Medicine Announces Two
Research Fellowships in Oral Pathology and Periodontology.

Two fellowships intended for graduate dentists interested in research and teaching careers in oral pathology and periodontology are now available. In addition to participation in an extensive research program, the fellowships offer training in oral pathology in a laboratory with an active biopsy diagnostic service, and an opportunity for preparing for advanced degrees. There is an annual stipend of $5,000 and the fellowships are renweable.
Additional information may be obtained from Dr. Irving Glickman, Dept. of Oral Pathology and Periodontology, 136 Harrison Ave., Boston, Mass.

Volume 23
Numéro 11
Novembre 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

De quelques aspects pathologiques de la muqueuse buccale*

par R. BATAILLE, stomatologiste de Paris

J'ai pensé vous intéresser en vous exposant des problèmes qui touchent autant le médecin de médecine générale que le spécialiste, c'est-à-dire le stomatologiste.

Il s'agit des manifestations pathologiques de la muqueuse buccale. Il va sans dire que ce chapitre est si vaste que je serai forcé de me limiter soit à quelques manifestations qui prennent leur intérêt parce qu'elles sont d'actualité, soit encore, à des manifestations pour lesquelles l'avis du spécialiste est indispensable.

Il faut d'abord insister sur le fait que les réactions de la muqueuse buccale sont extrêmement variées, mais souvent imprécises et polymorphes. Un même type de lésion peut se rencontrer pour des causes très différentes et le diagnostic étiologique est difficile. C'est ainsi que les syndromes généraux des maladies aiguës ou chroniques, les carences, les intoxications exogènes ou endogènes, les intolérances peuvent donner des lésions semblables. Aussi, c'est bien souvent en rattachant le syndrome buccal à un syndrome général qu'on a la clef du problème.

Mais, inversement, et c'est là que le spécialiste prend sa place, l'état de la muqueuse buccale dépend d'un nombre important de facteurs locaux.

En effet, non seulement la muqueuse buccale répond aux troubles du système digestif (estomac, intestin, foie, pancréas), mais encore elle est soumise à des irritations diverses: mécaniques, chimiques, physiques, infectieuses. La flore microbienne buccale est parmi les plus riches et les plus variées; elle comprend d'ailleurs non seulement des germes microbiens, mais encore des champignons et des virus.

Ces germes animés ou inanimés vivent à l'état de saprophytes et c'est une modi-

* Conférence présentée au Congrès de l'Association dentaire de la province de Québec tenu à Sherbrooke du 27 au 29 mai 1957.

fication de résistance soit générale soit locale qui entraîne de temps en temps un réveil de la virulence. De plus, les organes dentaires peuvent être non seulement la cause d'irritation mécanique, d'ulcérations traumatiques mais encore de déséquilibre articulaire qui retentissent sur la calcification des os alvéolaires et secondairement sur la gencive.

Enfin, les aliments, les matériaux d'obturation ou de prothèse, les médicaments locaux ou généraux, en modifiant le flux salivaire ou le Ph en s'éliminant par la salive, en modifiant la flore microbienne gastro-intestinale, créent des lésions d'intolérance ou de véritables stomatites microbiennes.

Eh bien, parmi toutes ces manifestations, il en est une qui semble d'actualité et dont la fréquence augmente d'année en année. Il s'agit de l'infection de la muqueuse buccale par un champignon, le candida albicans. En mai 53, dans un exposé que j'ai présenté à l'Ecole dentaire de Paris sous le titre, "L'abus des antibiotiques", je signalais déjà les dangers consécutifs à l'emploi inconsidéré de ces médicaments pourtant remarquables. Je parlais des résistances microbiennes succédant à des traitements prolongés et mal conduits; je parlais aussi des troubles digestifs et des stomatites qui commençaient à apparaître. Depuis, des observations nombreuses se sont accumulées et les antibiotiques, surtout ceux du groupe de l'auréomycine employés par voie buccale, semblent de plus en plus responsables de l'éclosion de mycoses à candida albicans, anciennement appelées "monilia" ou "oidium" et plus vulgairement "muguet".

Le muguet est connu depuis bien longtemps déjà, puisqu'en France, Charles Robin en fit une étude en 1847. Puis Parrot, dans son livre sur l'athrepsie du nourrisson, décrivit magistralement, en 1877, toutes les manifestations du muguet du nourrisson et ses complications avec une iconographie remarquable. Mais le muguet et les complications digestive broncho-pulmonaires semblaient alors réservés au seul nourrisson athrepsique ou encore au vieillard débilité ou cachectique. Or, depuis l'emploi des antibiotiques, non seulement les cas de muguet sont plus nombreux, mais ils sont plus graves. On note actuellement des cas de muguet généralisé à forme septicémique, avec un pourcentage élevé de mortalité; non seulement le nombre de ces cas augmente chez le jeune, mais, en plus, on voit maintenant des cas du muguet chez l'adulte non cachectique ayant simplement reçu des antibiotiques.

C'est ainsi que dans le seul laboratoire de l'Institut Pasteur de Paris, alors qu'en 1850, on identifiait 13 cas de muguet, en 1955, on en décelait 171, indépendamment de toutes les autres mycoses plus exceptionnelles dont le nombre semble également augmenter.

Dans ce domaine, on a fait d'ailleurs de grands progrès, car, en fait, l'identification du candida albicans est difficile. Il y a quelques années, la confusion était grande et on en décrivait près de 300 espèces. Actuellement, pour ne parler que de travaux français, je citerai ceux de Langeron qui a établi des bases nouvelle de classification d'après:

a) les caractères morphologiques,
b) les caractères de fermentation des sucres,
c) les caractères d'assimilation des sucres et des substances azotées.

Le muguet buccal se présente sous la forme de taches blanchâtres régulièrement arrondies ayant quelques millimètres de diamètre. Elles sont souvent si blanches qu'elles ressemblent à du lait caillé. Mais elles peuvent être grises ou brunes. Quand l'évolution se prolonge, les taches se rassemblent, confluent et forment une vaste nappe d'un blanc pur, assez épaisse, qui couvre la langue, les lèvres, la face interne des joues, le pharynx. Ces nappes, véritables cultures de C. Albicans reposent sur une base érythémateuse, sur une muqueuse rouge vif, lisse, sèche, vernissée. D'ailleurs, cette muqueuse dépolie et rouge peut apparaître plusieurs jours avant la formation

des nappes de culture; elle est un stade prémonitoire dont l'importance est considérable d'un point de vue prophylactique. Si l'on peut y voir la manifestation de la disparition des vitamines du complexe B sous l'action des antibiotiques, on peut aussi prouver que de temps en temps le champignon a déjà envahi la muqueuse.

Dans certains cas, une perlèche accompagne les lésions buccales, ce qui montre que la perlèche n'est pas due uniquement au streptocoque, comme on l'a souvent prétendu. Enfin, on peut aussi noter des lêsions unguéales de périonyxys. Puis peu à peu le muguet gagne, envahissant l'oésophage, l'estomac, l'intestin. La dysphagie devient intense, le malade refuse toute nourriture, il a de la diarrhée, il vomit. On trouve des champignons dans les selles ou dans les urines, et même dans le sang par hémo-culture. Il s'agit donc d'une véritable septicémie qui explique les localisations multiples et diverses, pulmonaires, viscérales, cérébrales. C'est ainsi qu'on trouve le champignon dans le liquide céphalo-rachidien.

On peut voir d'ailleurs d'autres manifestations buccales: glossites exfoliatrices, cheilites fissuraires et ulcérations multiples. Il semble également que la langue noire pileuse, sur laquelle on a tant discuté, soit produite de temps en temps par les antibiotiques. Toute la muqueuse buccale et surtout la langue deviennent douloureuses, puis on note une hypertrophie considérable des papilles filiformes. La muqueuse dorsale de la langue est velue, elle devient brune ou noire. Par la suite, l'enduit noirâtre desquame, laissant une langue oédématiée, rouge et sèche.

Tomaszewski a publié 57 cas de langue noire pileuse dont 41 sont survenus au cours traitements antibiotiques locaux ou par voie générale. Mais en réalité, on ne met le candida albicans en évidence que dans la moitié des cas. Si bien que Carteaud et Drouet ont ou conclure: le fait que l'on trouve des variétés différentes de candida détruit l'entité du champignon de la langue noire, mais ne suffit pas à rejeter toute influence du champignon. De mon côté, je puis vous dire que la langue noire pileuse était connue bien avant les antibiotiques et que souvent elle était due à des bains de bouche oxygénés.

Il est donc important dans toute affection de prouver l'existence du champignon. Le prélèvement se fait à l'aide d'un goupillon stérile et par un examen extemporané. Ou encore on place le prélèvement au fond d'un tube dans un peu d'eau physiologique additionée d'un peu de pénicilline (50 U.O. au cc) et on conserve le prélèvement au frigidaire. On peut faire des examens directs, mais l'identification certaine réclame des cultures et la recherche des caractères de fermentation.

Il faut déjà signaler que C.A. est un saprophyte habituel des muqueuses et de la peau. Il ne peut donc être déclaré pathogène que s'il est abondant. Les filaments et levure pénètrent sous la muqueuse et même dans la musculeuse, ce qui explique les difficultés thérapeutiques fréquemment rencontrées au cours des mycoses.

Quand le champignon se répand par septicémie, il produit dans les viscères des granulomes inflammatoires. Enfin, il faut savoir que la présence de champignons au contact de lésions tuberculeuses ou cancéreuses est chose banale.

Mais le problème qui nous occupe est de prouver que les antibiotiques sont bien la cause d'augmentation du nombre des mycoses. Certaines expériences semblent à ce sujet démonstratives. Si l'on introduit par voie buccale à un lapin, une suspension de C.A. on déclanche une infection cliniquement inapparente, mais décellable par culture pendant 10 jours. Si l'on associe au bouillon de culture de la chlorotétracine, on provoque des lésions buccales. Dans le premier cas, alors qu'il n'y a pas de lésions cliniques, si l'on pratique des coupes de la langue, on trouve des filaments et des levures dans les papilles dermiques. Par conséquent, une infection à C.A. peut exister, malgré l'absence de lésions cliniques et la chlorotétracine fait apparaître les lésions.

De son coté, Séligman a fait en 1952 des

expériences sur des souris avec l'auréomycine et le champignon. Toutes les souris ayant reçu le champignon et l'antibiotique par inoculation intra-péritonéale sont mortes alors que celles qui ne recevaient que l'un ou l'autre vivaient parfaitement.

A la suite de ces expériences, la Commission américaine des Médicaments a obligé les laboratoires à signaler les risques que font courir les antibiotiques à large spectre: auréomycine, chloramphénicol et terramycine.

Dans une statistique récente de l'Institut Pasteur de Paris, sur 34 cas de muguet, un cas était dû à la pénicilline seule, un cas au chloramphénicol seul, un cas à la terramycine, 5 cas à la pénicilline associée. L'apparition la plus rapide du muguet est survenue 24 heures après le début du traitement et la plus lente 10 semaines. Enfin, l'association antibiotiques-cortisone semble particulièrement favorable à l'éclosion des mycoses.

La thérapeutique des mycoses est difficile, car la paroi de nombreux champignons est constituée de chitine. L'iode fut un des premiers fongicides employés. Il faut reconnaître qu'il est beaucoup plus actif contre la sporotricose qu'envers les autres mycoses. Pourtant, pour le muguet buccal, des bains de bouche avec une solution iodée contenant une cuillèrée à café de teinture d'iode et une cuillèrée à café de chlorure de sodium par litre d'eau donne souvent et de façon commode de bons résultats. On peut associer l'iodure de potassium à prendre par la bouche à raison de 5 gouttes d'une solution saturée d'I.K., 3 fois par jour, puis par doses progressives atteignant 10 grs par jour. Mais étant données les intolérances à l'iode fréquentes, le mieux est d'employer une combinaison iode-albumine végétale spécialisée en France sous le nom d'iodomaisine.

En fait, le nombre incalculable de médicaments employés contre les mycoses montre bien qu'il n'y en a pas qui agisse dans tous les cas. Bien souvent, après une amélioration, vient une récidive et j'ai l'impression qu'il est utile de varier les traitements et souvent d'associer plusieurs thérapeutiques. On a d'ailleurs trouvé depuis ces dernières années de nouveaux produits, tel l'acide indécylénique, qui est un acide non saturé, qu'on peut employer localement en pommade ou solution; les amines quarternaires, tel le biocidan. Les colorants, comme le violet de gentiane, en solution à 1/10,000 agissent bien localement. Mais les médicaments qui donnent actuellement le plus d'espoir sont les antibiotiques antifongiques. Vous savez en effet qu'on peut diviser les antibiotiques en trois catégories:

1° Les antibiotiques antibactériens

2° Les antibiotiques antibactériens et antifongiques

3° Les antibiotiques uniquement antifongiques.

Ceux-ci sont produits par diverses espèces de streptomices. Ce sont des polyènes, c'est-à-dire des corps chimiques comprenant plusieurs (CH- CH) n. La mystamine qui semble plus efficace est un tétraène. Il est spécialisé sous le nom de Myco-Statine. Il est isolé du streptomices noursei et n'a aucune action sur les bactéries. Il est dosé en unités à raison de 3,500 à 4,000 unités au mmg. Il n'est pas toxique par voie buccale, car il n'est pratiquement pas absorbé par l'intestin. Il se présente sous la forme de dragées dosées à 500,000 unités qu'on peut écraser dans les aliments ou encore sous forme de poudre dont chaque flacon contient 1/200,000 unités et qu'on dilue dans 10 cc d'eau distillée. La posologie est de 100,000 à 150,000 unités par Kgs de poids et on peut donner chez l'adulte jusqu'à 5 millions d'unités par jour soit dix dragées. Enfin, on emploie une solution injectable depuis peu par voie intra-musculaire ou intra-veineuse.

Mais si les résultats obtenus avec la Myco-Statine sont très encourageants, il ne sont pourtant pas bons dans tous les cas. Il faut insister sur l'importance d'un traitement local associé au traitement général, sur la contagiosité réelle du muguet, sur l'importance de l'état général du malade: diminution de résistance de

l'organisme, troubles endocriniens, lésions locales chroniques, diabète, hypo-thyroïdie.

En ce qui nous concerne tous, médecins de médecine générale ou spécialistes, devant la fréquence accrue des mycoses et devant leur gravité, nous devons surtout rechercher la prophylaxie et c'est dans l'emploi plus raisonné et plus modeste des antibiotiques que nous devons la trouver. Aussi je vais me permettre de faire une petite incursion dans le domaine de notre pathologie si spéciale.

Comment se passent les faits le plus souvent?

Un malade présente brutalement une tuméfaction péri-maxillaire; il souffre violemment, il fait de la température, il présente un trismus. Il s'agit manifestement d'une affaire infectieuse d'origine dentaire dont les germes le plus souvent sont sensibles aux antibiotiques. Pour éviter les injections, on donne au malade des antibiotiques du groupe de l'auréomycine, d'autant plus que le spectre d'action de ces antibiotiques est plus large que celui de la pénicilline. Tout semble s'arranger, la température baisse, le malade souffre moins, il conserve pourtant un trismus. Puis, après un début encourageant, l'évolution traîne. Le malade souffre encore. La tuméfaction ne s'étend plus, mais elle persiste. On augmente alors les doses ou l'on change d'antibiotiques et la mycose apparaît compliquant encore le problème.

L'infection, les germes microbiens et leur toxine viennent de la chambre pulpaire et du canal radiculaire d'une dent. Les germes ont gagné l'espace péri-apical de la dent, ils ont migré à travers l'os maxillaire, ils ont envahi les tissus péri-maxillaires; les antibiotiques agissent bien sur les germes qui ont envahi ces tissus, puisqu'ils agissent par voie sanguine. Mais ils n'ont aucune action sur les germes situés à l'intérieur de la dent. Celle-ci constitue un foyer isolé dans l'organisme qui continue à distribuer germes et toxines. De plus, comme l'affection traîne, le foyer péri-maxillaire finit lui-même par s'isoler dans une gaine de sclérose où la circulation inexistante n'apporte plus d'antibiotiques. Enfin, comme pour toutes les infections mal jugulées, il se crée des résistances microbiennes.

On peut tirer de tous ces faits des conclusions. Devant une infection d'origine dentaire grave, l'avulsion de la dent ou le curetage de la lésion apicale avec la suppression du foyer intra-dentaire, selon les cas, s'impose quel que soit le stade évolutif du processus. Cette vérité était déjà admise avant l'ère des antibiotiques; elle est encore plus absolue maintenant, car si les antibiotiques ne peuvent atteindre un foyer inclus dans une dent, ils évitent certainement la diffusion de l'infection après l'acte opératoire.

Ainsi nous ne verrons plus ces infections cellulaires ou ganglionnaires qui trainent, qui passent à la chronicité, parce que nous n'avons pas supprimé la cause et nous ne verrons plus ces mycoses désespérantes par leur ténacité. De plus, puisque les germes d'origine dentaire sont surtout des germes anaérobies particulièrement sensibles à la pénicilline, le choix de cet antibiotiques s'impose d'autant plus qu'il est celui qui facilite le moins la formation des mycoses. Enfin, n'oublions pas qu'avant les antibiotiques, nous avions des thérapeutiques suffisamment actives dans la très grande majorité des cas. Les vaccins, les thérapeutiques facilitant la leucocytose et créant des chocs, tel l'argent colloidal, doivent être conservés. Quant aux antibiotiques, on ne doit les employer que dans des conditions bien précises de diagnostic et de traitement et non pas comme une méthode de facilité. Mais il est une autre aspect du problème beaucoup plus difficile à résoudre. Les différentes formes de tuberculoses méningées, pulmonaires, osseuses, sont justiciables d'une antibiothérapie intense, prolongée, polyvalente. De plus, en plus, et en particulier maintenant que les adénites tuberculeuses, que les lésions pulmonaires sont soumises à des sanctions chirurgicales, les malades

reçoivent des doses importantes de streptomycine, de rimifon, de P.A.S. destinées à préparer l'acte opératoire.

Aussi le problème est souvent difficile à résoudre à savoir si un malade présente une ulcération tuberculeuse de la cavité buccale ou une ulcération mycosique ou une simple glossite aux antibiotiques. Sauf lorsqu'il s'agit de vieux tuberculeux, ayant déjà constitué des résistances, on peut dire que les ulcérations tuberculeuses n'existent plus. Dans la plupart des cas, il s'agit de glossites produites par l'antibiothérapie. Dans les cas difficiles, le prélèvement et l'examen de laboratoire permettent de savoir s'agit d'une mycose ou d'une lésion tuberculeuse. Quoi qu'il en soit, si l'emploi massif et systématique des vitamines du complexe B. de bacille lactique permet en général d'éviter ces accidents, il n'en reste pas moins que la recherche de nouveaux antibiotiques est toujours justifiée.

Dans certains cas, la question se pose d'une façon dramatique. J'en veux pour exemple une consultation récente auprès d'une jeune fille de 13 ans commençant une primo-infection pulmonaire sévère et présentant au bout de quelques jours de traitement (streptomycose, P.A.S., rimifon) une stomatite grave et extrêmement douloureuse, supprimant toute possibilité d'alimentation. En fait, l'enfant avait un retard dentaire et brutalement, les prémolaires et les secondes molaires évoluaient ensemble, produisant une stomatite pseudo-aphtoide d'évolution permettant fort heureusement de continuer le traitement de la primo infection. Mais à côté des stomatites du muguet, on voit également des stomatites par intolérance, véritables stomatites allergiques. Dans ces cas, la pénicilline semble aussi fréquemment en cause que les autres antibiotiques; il s'agit alors de glossites dépapillantes, érythémateuses, ulcérées, très douloureuses et qui s'accompagnent parfois d'une éruption papuleuse ou même d'une érythrodermie généralisée, prurigineuse et pénible. J'en ai rencontré un cas récemment qui s'est produit après une

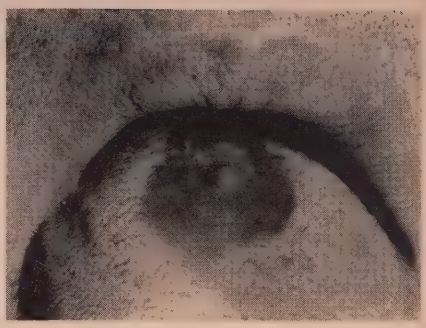


FIG. 1

seule injection de pénicilline. Il est d'ailleurs difficile de savoir s'il s'agit d'une intolérance à la pénicilline elle-même ou au solvant.

La même question se pose à propos des glossites succédant à une antibiothérapie locale, dont voici un exemple: une langue dépapillée, rouge vernissée, douloureuse, et fissurée a vu ses lésions se produire après l'emploi de pastilles contenant de la pénicilline. (Fig. 1) Les exemples en sont fréquents et je pense que l'abus de ces pastilles est néfaste d'autant plus que leur emploi immodéré est à la base vraisemblablement d'un certain nombre de résistance microbienne acquises.

Je viens de prononcer le mot intolérance. Eh bien, la muqueuse buccale comme la peau, réagit diversement selon les individus, mais ce qu'il faut savoir c'est qu'on peut avoir des réactions d'intolérance limitées à la muqueuse sans réactions cutanées et provoquées par des produits divers employés par voie générale ou ayant pris contact avec l'organisme en un endroit très éloigné de la face.

Un groupe de médicaments prend ainsi une grande importance par l'emploi extrêmement large qu'on en fait, si large qu'on ne pense pas à eux devant certains accidents. Je veux parler des anti-histaminiques de synthèse dont le chef de file et l'un des premier né est le Phénergan. Le Phénergan calme le prurit et fait dormir; aussi son administration est elle logi-

que dans l'eczéma chronique et dans l'urticaire. Malheureusement, le médicament est lui-même responsable d'eczéma tenace et étendu. De plus, la crème au Phénergan est plus sensibilisante encore que les comprimés et le malade atteint d'un eczéma produit par la crème l'entretient indéfiniment par les comprimés et inversement. (Fig. 2) Citons le cas d'une femme âgée qui présentait des insomnies totales dues au prurit intense d'un lichen plan cutané. Un seul médicament la calmait, le Phénergan. Quand on me l'a adressée pour cette stomatite, elle prenait 3 comprimés de Phénergan par jour depuis 1 an. La suppression du médicament fit disparaître les lésions buccales en quelques jours. Mais je continue à la traiter depuis et, de temps en temps, elle présente des poussées de lichen plan typique de la muqueuse, ce qui prouve que sa stomatite n'était qu'une exacerbation du lichen sous l'effet du médicament. On pourrait ainsi discuter à perte de vue sur la nature du lichen plan dont certains auteurs soutiennent l'origine mycosique.

Voici d'ailleurs un cliché d'un lichen typique de la langue dont l'intérêt est de montrer la lésion à différents stades de son évolution. Au début, en effet, un examen à la loupe montre dans le fond des espaces interpapillaires un enduit gris blanc. Celui-ci va s'épaissir peu à peu, s'étendre et finira par envahir, par noyer les papilles elles-mêmes. A un moment de l'évolution, on verra un réseau très fin dont chaque maille est occupée par un point rosé correspondent au sommet d'une papille. (Fig. 3)

Plus tard, tout se confond en une plaque d'un blanc mat quelquefois légèrement déprimée et atrophique, sans infiltration, ni inflammation de la muqueuse voisine. C'est la variété musculaire en pain à cacheter.

Mais on observe auusi une variété dite en nappe sous forme de larges plaques, de trainées plus ou moins étendues à contours irréguliers. Il correspond à un épaissement de l'épiderme lingual qui submerge les papilles. Ces plaques sont dures au toucher, mais non sclérosées en profondeur.

A la face interne des joues où siège souvent le lichen, surtout à la partie postérieure et en regard de l'interligne articulaire dentaire, l'aspect est différent. Il s'agit alors d'un réseau extrêmement fin, blanc pur et ponctué par endroit. Le dessin est en général extrêmement irrégulier et entre les mailles du réseau on aperçoit la muqueuse saine. C'est la variété en feuilles de fougère.

Le lichen plan évolue irrégulièrement, par poussées. On peut, sans traitement, le voir disparaître, s'atténuer ou, au contraire, s'aggraver. Dans 80% des cas, la localisation buccale accompagne des lésions cutanées que l'on trouve surtout à la face antérieure des poignets et au

FIG. 2

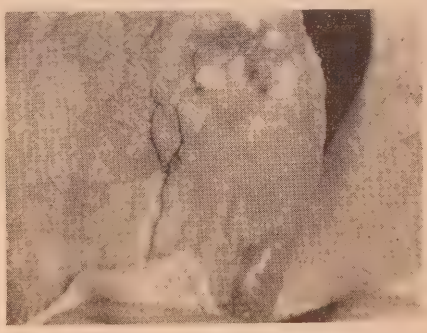


FIG. 3

niveau des lombes. Le traitement le plus classique jusqu'alors en France, comprenait l'arsenic, surtout l'arsenic pentavalent, comme le stovarsol, qu'on donne en pastilles ou le cacodylate de soude en injections auquel on associe des bains de bouche d'eau de Saint Christau ou encore d'eau de Dalibour faible qui contient du sulfate de cuivre, à raison d'une cuillerée à dessert par demi-verre d'eau tiède. La plupart du temps, il s'agit de malades nerveux et les médications à base de belladone et de gardénal sont d'utiles compléments.

Depuis quelques mois, j'ai essayé avec d'autres auteurs et dans des formes localisées, l'hydro-cortisone en injection sous-muqueuses, avec, semble-t-il, d'excellents résultats.

Il fut classique très longtemps de prétendre que le lichen buccal était une lésion sans gravité et que, contrairement à la leucoplasie, elle ne menait jamais au cancer. Des observations récentes relativement nombreuses montrent qu'il n'en n'est rien et qu'une plaque de lichen, surtout dans sa forme ulcérée, peut dégénérer comme une plaque de leucoplasie. Ces lésions demandent donc à être surveillées très régulièrement.

On peut voir des leucoplasies de la langue en voie de dégénérescence. Sur ces langues couvertes d'un vaste placard leucoplasique qui occupe presque toute la face dorsale on voit, près des bords, une zone où la kératose a disparu; en cet endroit, la muqueuse apparait rouge, ulcérée, fissurée, saignotante. Le bord est cerné par de petites formations perlées et, à la palpation, le fond se montre induré. De plus, elle est douloureuse. Ce stade précurseur classiquement signalé est important à connaître puisqu'il est le tout premier terme du cancer.

La dégénérescence de la leucoplasie est une réalité qu'on ne peut nier. En France, on estime que 15 à 20% des leucoplasies évoluent vers le cancer, surtout quant il s'agit d'une forme hyperkératosique ou verruqueuse.

Une femme âgée de 70 ans présentait une leucoplasie verruqueuse d'une extension inhabituelle, puisqu'elle occupait pratiquement les remparts alvéolaires dans leur totalité et la face interne des joues depuis la commissure jusqu'à la région tubérositaire. Le palais lui-même était atteint par endroits. Cette leucoplasie évoluait lentement depuis 20 ans malgré divers traitement. Elle souffrait de la joue gauche pour la première fois depuis une quinzaine de jours et la présence de ce sillon profond, ulcéré, saignotant, induré, ne laissait aucun doute sur la cancérisation de la lésion.

L'étendue de la kératose, le siège extrêmement défavorable du cancer me rendait très hésitant quant au choix de la thérapeutique. En résumé, un traitement radiothérapique conduit par un de nos meilleurs radiologiste, le Dr Baclesse, a amené une disparition totale des lésions à ma stupéfaction et à ma joie.

D'une façon générale, le traitement habituel d'une leucoplasie non cancérisée réclame une hygiène buccale sévère. Suppression du tabac, des alcools, des épices, soins dentaires réguliers. Les bains de bouche émollients agissent bien ainsi que les bains de bouche à l'eau de Dalibour, c'est-à-dire au sulfate de cuivre. Le traitement antisyphilitique bien conduit, l'arsenic pentavalent améliore souvent, mais guérit rarement. Enfin, la surveillance constante des lésions est obligatoire. En cas de doute d'une cancérisation, il ne faut pas irriter les lésions par des caustiques, ni recourir à un traitement antisyphilitique, mais faire une biopsie; on peut alors coaguler les lésions ou les extirper chirurgicalement.

Dans les formes localisées, je pense qu'à tout point de vue la coagulation est indiquée, même s'il n'y a aucun signe de cancérisation.

S'il est certain que la syphilis est sclétogène, que de nombreuses lésions syphilitiques s'accompagnent de leucoplasie, il est certain aussi qu'on a exagéré l'importance de la syphilis. Ainsi des irritations purement locales chez des individus peut être prédisposés sont suffisantes pour produire une leucoplasie.

Il y a ces leucoplasies d'origine profes-

sionnelle, par exemple, la leucoplasie des tapissiers. Vous savez en effet que ces artisans tiennent toujours plusieurs clous en réserve sous leur langue. Cette irritation constante explique le siège bien particulier de la lésion, siège très évocateur. Il y a aussi ces leucoplasies palatines chez les gros fumeurs. Toute la voute palatine est occupée par un vaste placard blanchâtre irrégulier et la couche de leucoplasie cerne l'orifice des multiples glandes salivaires palatines dont l'ostium est déprimé.

Il y a par contre des langues anormales d'aspect et qui pourtant ne sont pas pathologiques. Lorsque les sujets, accidentellement, examinent leur langue, ils sont soudainement inquiets et viennent nous consulter. Il y a de ces glossites exfoliatrices marginées, encore appelée "langues géographiques" et qui se manifestent par des taches, des anneaux, des carcinations, des festons. Les taches sont composées d'une bordure blanche large de 1 à 2 mm cernant une surface desquamée d'un rouge vif au contact du liseré, mais de moins en moins rouge à mesure qu'on va vers le centre. Les taches s'étalent, confluent rapidement et le dessin se modifie d'un jour à l'autre. Les taches nouvelles se produisent incessamment selon le même processus. Elles commencent par une petite élevure arrondie, blanc grisâtre, se déformant rapidement au centre et devenant rouge vif. C'est l'extension de cette lésion primitive qui finit par lui donner son aspect caractéristique. Il n'y a aucune induration de la muqueuse, la langue est complètement indolore, la lésion est en général ignorée du malade. Le professeur Turpin, en France, qui étudie surtout les problèmes de génétique, en a récemment entrepris une étude et insiste sur les points suivants: cette glossite se voit surtout chez les jeunes et chez la femme. Elle débute sans cause apparente sur une muqueuse saine entre 6 mois et un an. Elle persiste pendant des années; quand elle disparaît, elle laisse souvent place à une langue plicaturée. Elle se rencontre d'ailleurs dans les familles entachées de langues plicaturées. Il semble bien que la langue géographique comme la langue plicaturée sont des langues dystrophiques et sont dues à l'action d'un même gène. La syphilis n'est pour rien dans leur apparition et le traitement est inutile.

La langue plicaturée relativement fréquente n'apparaît pas dans la première année de la vie, mais à l'âge de 3 ou 4 ans, précédée peut-être par la langue géographique. Elle se traduit par une augmentation de profondeur du sillon médian, par des plis irréguliers dans tous les sens qui lui donnent un aspect lobulé, cérébriforme, foliacé, scrotale. Elle aussi passe inaperçue, car elle est indolente et les sillons qui la parcourent sont accolés et invisibles, quand l'organe se tasse entre les dents. Mais dès que le sujet tire la langue, on est frappé:

1° par une langue volumineuse, large, aplatie, qui s'étale.

2° par l'aspect découpé des bords.

3° par la couleur rouge foncé, grenat, de la muqueuse qui n'est d'ailleurs pas vernissée.

4° par les sillons profonds qui la parcourent et lui donnent un aspect foliacé ou cérébriforme.

Or la glossite profonde de la syphilis tertiaire donne à la langue un aspect théoriquement voisin. En fait l'erreur n'est pas possible, la langue scrotale est congénitale, alors que la langue ficelée syphilitique est acquise. Les sillons déplissés montrent dans la première une muqueuse saine, non vernissée, non ulcérée et souple alors que la langue syphilitique présente des fissures rigides avec une muqueuse indurée, souvent ulcérée et souvent parcourue par des taches de leucoplasie.

Les sillons sont sinueux, transversaux, obliques, souples et indolents et partent des bords dans la langue scrotale. Ils sont rigides, rectilignes, longitudinaux, parallèles à un sillon médian, indurés, douloureux et ne partent pas des bords, dans la langue syphilitique. D'autres sillons coupent transversalement les sillons longitudinaux à angle droit formant un ensemble mamellonné, parqueté. D'un

côté, la langue scrotale est élargie et souple, de l'autre, la langue syphilitique est épaissie, rigide, malhabile: c'est la langue de perroquet. Au total, l'une est une langue anormale d'aspect mais saine, l'autre est nettement pathologique. Pour Turpin, la langue flicaturée est due à un caractère Mendelien lié à un seul gène dominant.

Comme vous le voyez, la lésion siège sur la face dorsale de la langue immédiatement en avant du V lingual. Sa forme est grossièrement losangique mais elle est toujours médiane. Elle comprend une surface dépapillée, rouge, mamellonnée, aux bords nettement arrêtés. Elle est légèrement indurée, mais indolente. Elle s'étend lentement et finit par se stabiliser. Classiquement, elle résiste à tous les traitements. Pourtant, sachant que, dans la pelade tenace, des dermatologistes avaient eu de bons résultats avec des injections sous-muqueuses d'hydro-cortisone, j'ai essayé ce traitement et j'ai obtenu une amélioration incontestable.

Voici un cas qui intéresse à la fois le stomatologiste et le dermatologiste. C'est celui d'un enfant de 11 ans qui m'a été adressé parce qu'il perdait toutes ses dents. Il présentait une paradontose suppurée à évolution foudroyante. Ses gencives étaient bourgeonnantes, décollées et par de nombreux clappiers sortait du pus. Les dents étaient mobiles, et il avait déjà perdu en quelques mois les incisives inférieures et supérieures permanentes. D'ailleurs, sa dentition temporaire avait également disparu rapidement, disloquée par le même processus dès l'âge de 4 ans. Comme la plupart de mes collègues étrangers et français ayant rencontré cette affection curieuse et rare, j'ai d'abord orienté mes recherches vers des troubles endocriniens. L'enfant, hospitalisé pendant un mois, a été examiné des pieds à la tête et a subi tous les examens complémentaires: radios du crâne, dosage des cortico-stéroides, des phosphatages, métabolisme de base, examen anatomo-pathologique d'un fragment de gencive, B. W. Tout était négatif. Un seul élément, l'enfant présentait une kératodermie palmo-plantaire symétrique et congénitale et il était issu de parents consanguins. J'ai recueilli alors diverses observations étrangères et françaises dont la plus ancienne est une observation de deux dermatologistes français, Papillon et Lefevre, concernant un frère et une soeur atteints de la même maladie. Dans toutes ces observations, on notait la concomitance d'une pyorrhée foudroyante avec une kératodermie palmo-plantaire; mais tous les auteurs mettaient ces parodontoses sur le compte de troubles endocriniens, dont on ne pouvait d'ailleurs faire la preuve. Grâce à l'un de mes collègues dermatologiste, le Pr Duperrat, j'ai pu rassembler 4 cas semblables et j'ai acquis la conviction:

1° que cette forme de parodontose à évolution foudroyante devait être rattachée à un syndrome dermatologique, qu'on appelle la maladie de Méléda, et qui se caractérise par une kératodermie palmo-plantaire symétrique.

2° que cette kératodermie a des caractères particuliers: elle est héréditaire, mais récessive; elle n'est pas congénitale, mais apparait très tôt, vers l'âge de 2 ou 3 ans. Elle est érythémateuse, squameuse, et donne à la peau une couleur cireuse, un aspect de vieux parchemin sale et froissé. Elle évolue par poussées avec des périodes de sédation presque totale. Mais elle s'étend peu-à-peu au-delà de la plante des pieds et de la paume des mains, gagnant les faces dorsales, donnant même à distance des placards prétibiaux. Enfin l'étude généalogique de la famille du malade met en valeur un facteur de consanguinité.

3° D'ailleurs Méléda est une petite île allongée de 90,000 k., qui se trouve dans l'Adriatique très près de la côte yougoslave, face à Raguse. Elle compte 2,000 habitants. Elle a servi très longtemps à la République de Dubrovnik de lieu d'isolement en cas d'épidémie. Ainsi, des familles entières se sont trouvées isolées, d'autres se sont crées, ayant toutes entre elles des liens de parenté, des liens de consanguinité qui semblent constituer le facteur étiologique principal de la maladie. Depuis 150 ans, que des dermatologistes d'Europe Centrale, comme Neumann, Hélers, Kogoj, ont décrit la maladie de Méléda, on en a observé 300 cas dans l'île même et on en relève régulièrement d'année en année une dizaine de cas. Par contre, dans la maladie illyrienne, on ne décrit pas d'atteinte du système dentaire. Aussi, nous avons donné à la forme qui associe des

troubles dentaires aux troubles dermatologiques, le nom de forme de Papillon et Lefevre du nom des premiers dermatologistes qui ont signalé ces lésions. Cette forme n'est donc pas illyrienne et des cas qui ont été publiés se trouvaient aux Etats Unis, en République Argentine, en Allemagne, en France.

Fait plus curieux encore, deux dermatologistes allemands, Tost et Unna, ont décrit, dès 1880, une troisième forme de kératodermie palmo-plantaire héréditaire, qui s'oppose par certains caractères aux entités pathologiques que nous venons de décrire. Cette forme se caractérise:

1° par le caractère immuable et non évolutif de la kératodermie;

2° par l'épaisseur beaucoup plus importante des squames cornés qui donnent à la lésion un aspect de céramiques craquelées à bords nets, en vagues, soulignées par un liseré lilas brillant. Cette forme est fixe, non extensible, elle est génétiquement en dominance et ne présente pas de lésions dentaires. Ce qu'il faut retenir c'est qu'un facteur génétique est à la base des lésions alvéolaires et que tout traitement se montre inopérant. Ce sont des malades qui seront édentés rapidement quoi qu'on fasse.

Une stomatite d'aspect bien particulier intéresse en même temps le neurologue et le stomatologiste: c'est la stomatite du diphénylhydantoinate de soude appelé encore Solantyl ou Dihydan 34. Il s'agit d'un médicament employé dans la thérapeutique de l'épilepsie, c'est-à-dire d'un médicament que certains malades doivent prendre d'un bout à l'autre de leur existence. Dès l'introduction du Solantyl, on a signalé la possibilité de réactions d'intolérance d'ailleurs sans gravité, étant donnée la marge de sécurité entre la dose thérapeutique et la dose toxique. On signalait quelques troubles digestifs, quelques rash sans importance. Mais l'accident le plus important par sa ténacité, par son intensité, par les différentes questions d'ordre pratique qu'il pose est la stomatite. Elle débute souvent brutalement; en quelques heures, les gencives s'hypertrophient, s'hyperplasient et l'intensité peut être telle que les dents sont enfouies, recouvertes par un double bourrelet vestibulaire et lingual. Mais la muqueuse reste lisse, unie, ferme, sans tendance au ramollissement. A aucun moment de la maladie, elle n'est échymotique, ni fongueuse; cette forme est en général peu douloureuse chez l'enfant, mais l'adulte se plaint de douleurs diffuses et d'une tension pénible.

Quand on supprime le médicament dès le début de la stomatite les gencives retrouvent en quelques jours un aspect normal. Si le malade a déjà reçu des doses importantes et prolongées, les gencives ne reprennant jamais leur volume habituel. Les dosages d'acide ascorbique dans le sang montre une diminution importante: 6 mmgr. au lieu de 12. Lorsqu'on ne peut supprimer le Solantyl, il faut lui adjoindre des doses élevées d'acide ascorbique 300 à 500 mmgr. par jour, par voie buccale et un régime riche en vitamine C. De plus, l'hygiène buccale sévère est indispensable.

Avec les stomatites bulleules, nous pénétrons dans un domaine complexe qui intéresse le dermatologiste et le stomatologiste. La bulle ou phlyctène est un soulèvement circonscrit de l'épiderme dont la dimension va de la grosse tête d'épingle à celle d'un pois ou d'une noisette dans la cavité buccale. Le contenu est généralement séreux, parfois louche, parfois hémorragique, parfois purulent. Dans la bouche, les bulles crèvent rapidement. On est alors en présence d'une érosion, à contour macro-polycyclique, très superficielle. Le fond est rouge vif ou recouvert d'une membrane pélliculaire ou sphacélique qui représente la couche épidermique du toit effrondré. On retrouve souvent au pourtour, des lambeaux d'épithélium déchiqueté qui flottent plus ou moins. La bulle est de production instantanée, elle est due au clivage de l'épiderme. Une bulle buccale isolée et antérieure doit faire penser à un traumatisme: brulure avec une cigarette, morsure de la langue ou de la joue. Quand les bulles sont multiples, il faut éliminer d'abord les toxidermies bulleuses produites par l'iode, l'antipyrine, les bromures, l'arsenic. Le diagnostic s'appuie sur les notions histologiques d'une intoxication médicamenteuse et sur les mani-

festations cutanées concommitantes. Les antipyrinides se présentent sur la peau comme des plaques érythémateuses qui apparaissent brutalement et au centre desquelles naissent des bulles instantanées et éphémères. La plaque disparaît, mais laisse une tache brune. Les muqueuses sont atteintes avec prédilection. Les iodides bulleuses se voient beaucoup plus sur la peau que sur les muqueuses. Elles sont souvent purulentes et végétantes. Un catarrhe oculaire et nasal accompagne l'éruption.

L'intérêt des maladies bulleuses proprement dites, pour nous, réside dans le fait que le début de l'infection peut être uniquement buccal pendant une assez longue période, parfois pendant plusieurs années et que, d'autre part, certaines de ces maladies sont mortelles. La moins grave de toute est l'hydroa vésiculeux de Bazin ou herpès Iris de Bateman ou érythème polymorphe. La bulle buccale n'a rien de particulier, mais la lésion cutanée qu'il faut toujours rechercher est caractéristique. Les bulles cutanées sont cernées par une zone érythémateuse rouge vif, puis par une couronne vésiculo-bulleuse, elle-même limitée par un liseré érythémateux. On a un aspect en cocarde bien particulier, mais on trouve aussi des placards érythémateux non bulleux. L'éruption siège sur le dos des mains, aux plis articulaires, sur le front. L'hydroa buccal est douloureux, l'éruption dure de 15 à 30 jours et peut disparaître définitivement, mais il peut y avoir plusieurs poussées successives.

Elle évolue alors le plus souvent vers la maladie de Durhing Brocq. On sait peu de choses sur l'érythème polymorphe; on suppose qu'il s'agit d'une manifestation allergique ou d'une septicémie atténuée.

La dermatite herpétique de Durhing, elle, appelée encore dermatite polymorphe douloureuse de Brocq, se caractérise par le polymorphisme de l'éruption avec apparition simultanée de plaques érythémateuses, de vésicules, de bulles, de pustules, qui siègent surtout aux plis cutanés, mais aussi sur l'abdomen et le thorax, et par l'intensité des phénomènes douloureux et prurigineux avec conservation d'un bon état général, malgré la tendance marquée aux récidives. Le liquide des bulles contient des éosinophiles tandis que l'éosinophilie sanguine est marquée. Pour elle également, on pense à une toxémie. La maladie après plusieurs poussées peut guérir ou évoluer vers un pamphigus mortel.

Le pamphigus chronique vrai, troisième maladie bulleuse importante, débute souvent par la bouche. Le diagnostic en reste hésitant jusqu'au jour où l'éruption cutanée apparaît. Les bulles sont de grande taille, peu étendues, à liquide citrin. Lorsque la bulle se rompt, elle laisse sur la peau une croûte ou une surface rouge vif à nue qui s'infecte et suppure. Le signe de Nikolski est constant. Les phénomènes généraux apparaîssent, anorexie, amaigrissement, troubles digestifs, cachexie et mort en quelques mois. Ce qu'il faut retenir comme élément capital est l'incertitude fréquente de nos diagnostics dans ces infections dont le début est souvent buccal.

Il faudrait de nombreuses heures pour étudier entièrement la pathologie de la muqueuse buccale et je dois conclure.

Je me permettrai donc, pour terminer, d'insister sur le fait qu'il n'y a pas d'examen de la muqueuse buccale qui ne soit forcé de s'appuyer sur un examen général du malade. Nos manifestations buccales ne sont souvent qu'un symptôme qui doit s'associer à d'autres symptômes pour former un tout qui conduit au diagnostic.

ÉDITORIAL

Personnel auxiliaire de la profession dentaire

Les dentistes, comme tous les autres membres d'une profession, ont besoin de s'entourer d'assistants pour prodiguer leurs services.

Les médecins, par exemple, doivent compter sur un personnel auxiliaire nombreux et diversifié pour faire leur travail. Il leur faut, dans les hôpitaux, des infirmières et des techniciens de toutes sortes, des personnes qualifiées en biochimie, en diététique, en pathologie, enfin dans une variété infinie de domaines tous orientés vers le traitement des malades. Les statistiques montrent qu'un hôpital compte quatorze individus indirectement intéressés à la thérapeutique pour chaque médecin traitant.

On peut classifier en trois classes principales les raisons motivant l'existence de ce personnel technique auxiliaire.

1—D'abord, la pénurie des professionnels en face de la demande extraordinaire pour des services. On voit mal les médecins officier à tous les soins requis par les malades: donner les médicaments, faire les pansements, équilibrer les diètes, prendre les radiographies, etc. Ils n'en auraient pas le temps. Ils doivent donc se limiter à examiner les malades, poser les diagnostics et décider des thérapeutiques. Ainsi, en consacrant leur activité à la direction des traitements, ils peuvent voir un plus grand nombre de patients et rendre un meilleur service à la population.

2—Une autre raison qui milite en faveur du service technique auxiliaire est d'ordre pécuniaire. Les médecins, comme les dentistes, doivent confier une partie de leur travail à des assistants. Si un médecin devait exécuter toutes les besognes dictées par la pathologie d'un malade, les honoraires seraient plus élevés. Il vaut mieux confier certaines tâches à des subalternes, qui, à cause de leurs études moins longues et à cause des responsabilités moins lourdes qu'on leur confie, peuvent faire leur travail à des conditions moins onéreuses pour le patient.

3—Enfin, un technicien entrainé dans un domaine bien défini et ne s'occupant exclusivement que d'une fonction limitée peut rendre des services plus experts qu'une autre personne, possédant peut-être une plus grande culture, mais accomplissant une plus grande variété de besognes. C'est ce principe d'ailleurs qui a donné naissance aux diverses spécialités médicales et dentaires. Certaines tâches accomplies par un technicien seront souvent mieux réalisées qu'elles ne le seraient par un médecin ou un dentiste.

On voit que les professions médicale et dentaire ont toutes deux besoin d'un personnel technique auxiliaire; l'une, surtout pour les services hospitaliers; l'autre, pour le travail de laboratoire. Similitude de besoins, similitudes de solutions. Le tout, pour rendre de meilleurs services au public.

Mais là où cesse la ressemblance entre les deux organisations, c'est dans l'entraînement et la formation de ce personnel assistant. Tandis que les facultés médicales se préoccupent directement ou indirectement des écoles ou des institutions qui entraînent leurs assistants techniques (écoles de garde-malades, institut de diététique, école des techniciennes de laboratoires, institut de réhabilitation, etc.), les facultés dentaires se désintéressent de la formation de ceux qui doivent les aider continuellement, les techniciens dentaires.

Cette situation créé entre les deux corps, l'un professionnel et l'autre de métier, des incompréhensions et des problèmes qui dégénèrent, en partie, en pratique illégale.

En 1947, les dentistes de Suède, qui avaient comme nous à faire face aux problèmes de la pratique illégale, l'ont solutionnée d'une façon satisfaisante en établissant dans les Facultés dentaires des écoles pour les techniciens. "Grâce à cette initiative, écrit le directeur de l'Ecole de Technicologie de l'Etat, les techniciens, qui sont formés par des dentistes dans des écoles que ceux-ci dirigent, reçoivent un meilleur entraînement et ont un concept plus juste des rapports qui doivent exister entre eux et la profession dentaire."

Evidemment, tout n'est pas bon dans cette formule; on trouve des failles, dont l'une est de confier aux universités—institution de haut savoir, selon leur définition—l'enseignement d'un métier ou d'un art essentiellement mécanique. Ce domaine appartient aux écoles techniques ou d'arts et métiers. C'est une question qu'il faudrait débattre. Mais, la responsabilité des dentistes dans la formation de leurs assistants demeure. Tout irait peut-être mieux dans les relations entre dentistes et techniciens, si ceux-ci prenaient soin d'inculquer à leurs assistants les principes qui doivent animer ceux qui servent le public dans le domaine de la santé.

Gérard de Montigny.

Influence des glandes à sécrétion interne sur la morphogénèse dentaire

par le DR JEAN CARLOS MURACCIOLE[1]

Introduction

Le premier contact de l'homme avec l'odontologie naquit avec le premier trouble d'éruption ou bien avec la première pulpite. En effet, il n'y a pas d'autres facteurs, en dehors de la nécessité, qui puissent poser des problèmes à l'être humain. Depuis lors et jusqu'aujourd'hui l'odontologie, inconnue dans le monde des sciences, a passé par différentes étapes pour obtenir enfin un caractère scientifique, comme spécialité des sciences médicales, ayant pour but la santé de la dent et le maintien de celle-ci dans un équilibre physiologique.

La dent n'est pas un organe isolé dans la cavité buccale, mais elle fait partie de l'organisme et sa morphogénèse et sa vie sont conditionnées par tous les facteurs capables d'influencer l'organisme considéré comme une unité.

Tout ce qui trouble l'organisme, trouble aussi la dent, parce que celle-ci est reliée au reste de l'organisme par les deux grands systèmes de relation: *le milieu intérieur* et *le système nerveux*. Grâce à ceux-ci tous les éléments figurés du sang peuvent arriver aux organes dentaires et diffuser à travers leurs tissus, pourvu que la grandeur des molécules soit d'un calibre tel, qu'elles puissent passer à travers les canalicules dentinaires.

Parmi toutes ces substances, celles qui nous intéressent sont celles qui proviennent de la sécrétion des glandes à sécrétion interne dont les produits de sécrétion s'appellent hormones (du grec *j'excite*); suivant l'action qu'elles exercent, *fugitive, passagère* ou bien *continue,* on les réunit en deux groupes. Dans le premier rentrent celles qui agissent en développant un état d'activité suivi d'un état d'inhibition. Tel est le cas de la stimula-

tion des nerfs splanchniques, qui libère de l'adrénaline. Aussitôt que l'excès d'adrénaline disparaît, son action s'arrête. Dans le deuxième groupe on trouve les hormones à action continue et constante comme la thyroxine sécrétée par la thyroïde.

Chaque glande endocrine a une action spécifique dans l'organisme et son extirpation provoque immédiatement tous les troubles caractéristiques de son absence. Ces troubles sont compliqués, à cause des multiples corrélations qui existent entre les différentes glandes endocrines.

Les Glandes à Sécrétion Interne et la Dent

Depuis qu'on a découvert l'action des glandes à sécrétion interne dans l'économie de l'organisme, on a toujours cherché à trouver les rapports entre elles et la morphogénèse dentaire.

I. *Action des glandes à sécrétion interne sur les tissus dentaires en formation*

A ce sujet nous constatons les faits suivants:

1. Les altérations les plus importantes dans la morphogénèse des tissus dentaires s'observent chez les rats privés de leurs glandes parathyroïdes. L'altération atteint la calcification de la dentine et de l'émail et on observe aussi des modifications de structure de la pulpe dans laquelle la disposition des odontoblastes est désorganisée et anarchique. Ces dents présentent un véritable tableau de décalcification et sur ce point concordent soit les auteurs qui nous précédèrent, soit ceux qui nous ont suivis. La cause de ces anomalies est à rechercher dans le fait que l'extirpation de la glande mentionnée provoque, indirectement, une diminution de la calcémie et par conséquent un déficit calcique au niveau des endroits en voie de calcification.

2. Les altérations provoquées par l'extirpation de la glande thyroïde se localisent au niveau de la substance organique. On peut ainsi observer que la dentine des dents des animaux sans thyroïde présente une légère hypocalcification. Cette hypocalcification n'est pas due à un apport insuffisant de sels calciques, comme pour les parathyroïdes, mais à des altérations du substratum organique de la dent consécutives à l'ablation de la thyroïde. En effet, il ne faut pas oublier que cette glande contrôle le métabolisme du tissu conjonctif et la croissance de l'organisme, mais n'exerce aucune action sur le métabolisme calcique. Les troubles consécutifs à la thyroïdectomie sont légers et atteignent la trame organique sur laquelle se déposent les sels de calcium.

3. Les glandes surrénales n'ont aucune action sur la morphogénèse des tissus dentaires.

4. L'ablation des gonades provoque des troubles importants dans le processus morphogénétique. Ainsi la dentine des animaux gonadectomisés se calcifie mal et de façon irrégulière. Au niveau des molaires on remarque une tendance à l'oblitération de la chambre pulpaire.

5. Les dents des rats thymectomisés ne présentent aucune altération tissulaire. Le rôle du thymus n'est, en effet, pas encore précisé. D'autre part on peut se demander si le thymus est une glande à sécrétion interne ou non.

6. L'hypophyse exerce une action très légère sur la morphogénèse des tissus dentaires. Les animaux privés de cette glande présentent des dents avec une dentine d'aspect normal, à l'exception d'une zone de calcification irrégulière disparaissant chez les animaux qui survivent longtemps après l'opération. Pour nous, l'hypophyse agit en deux temps: premièrement de façon immédiate, c'est-à-dire tout de suite après son ablation, provoquant une calcification irrégulière et insuffisante de la dentine; secondairement, passé la période aiguë, on a un autre type de lésion caractérisé par l'oblitération de la chambre pulpaire. Cette oblitération est due au fait que l'activité des odontoblastes continue malgré que l'éruption soit arrêtée.

Nous interprétons ces résultats comme

conséquence d'une action indirecte de l'hypophyse sur les dents par l'intermédiaire des gonades. Le tableau histologique des dents des animaux privés de gonades est semblable à celui des rats hypophysectomisés et qui survivent longtemps après l'opération.

En résumé: parmi toutes les glandes à sécrétion interne, seulement les parathyroïdes troublent, d'une façon sensible, le processus morphogénétique des dents.

II. *L'éruption dentaire et les glandes à sécrétion interne*

Il est évident que seulement les glandes thyroïde et hypophyse ont une action sur la croissance et l'éruption des dents.

Pour expliquer cette relation entre l'hypophyse et la thyroïde d'une part et l'éruption dentaire d'autre part, il est nécessaire de rappeler les fonctions que ces glandes exercent dans l'économie de l'organisme: elles contrôlent la croissance.

Nous pensons qu'en premier lieu c'est l'hypophyse qui règle le processus d'éruption et de croissance des dents, grâce à l'hormone de croissance sécrétée par son lobe antérieur. La thyroïde intervient secondairement, dans la régulation du processus, par l'intermédiaire de la thyroxine et son action n'atteint pas l'importance de l'action hypophysaire.

En résumé: le processus de l'éruption et de la croissance des dents est contrôlé par l'hypophyse et secondairement par la thyroïde.

III. *Action des glandes à sécrétion interne sur les tissus dentaires définitifs*

Nous avons étudié systématiquement l'anatomie macro- et microscopique des molaires des animaux privés de leurs glandes à sécrétion interne. Nous basant sur ces études nous pouvons dire que seulement les molaires des animaux gonadectomisés réagissent devant le déficit glandulaire en augmentant l'activité des odontoblastes. Cette réaction provoque l'oblitération de la chambre pulpaire et la disparition des éléments organiques.

Conclusions

De ce qui précède on peut déduire que:

1) la parathyroïdectomie provoque de profondes altérations dans la calcification des tissus dentaires, aussi bien dans l'émail que dans la dentine;

2) la thyroïdectomie a une action sur l'éruption dentaire et provoque de légères modifications tissulaires;

3) la surrénale et le thymus n'exercent pratiquement aucune action ni sur l'éruption, ni sur la morphogénèse des tissus dentaires;

4) l'ablation des gonades provoque des modifications dans la calcification de la dentine. L'action des odontoblastes finit par oblitérer la chambre pulpaire;

5) l'hypophyse agit principalement sur l'éruption des dents et l'hypophysectomie provoque l'arrêt complet de cette éruption. L'action de cette glande sur les tissus dentaires peut être considérée comme légère et secondaire.

Médecine et Hygiène, 30/9/57

Volume 23
Number 12
Toronto
December 1957

Journal
OF THE CANADIAN DENTAL ASSOCIATION

Dental Epidemiology in Malaya

Part II—A Survey of Chinese, Malay and Indian Young Adult Males in Singapore*

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In Singapore on March 1st, 1954 the National Service Ordinance came into effect. By this law, National Servicemen are required to carry out training, outside of normal working hours, either with the Singapore Military Forces (formerly the Singapore Volunteer Corps) or with the Civil Defence Corps. In April, 1954 all males aged 18, 19 and 20 years were required for National Service. The total numbers who so registered very closely approximated the estimated total numbers of these age groups, resident in Singapore[1]. Subsequently the 19 year-olds were required to attend for medical examination and 13.0% failed to meet the required standards. A further 44.5% were considered to be below the educational level suitable for adequate training. In addition approximately 8% were granted postponement of National Service. In July, 1954 a public ballot was held and by which an intake of 1,000 National Servicemen were selected to commence training. Since that time several further intakes from this group, originally registered as 19-year-olds, have been arranged.

Therefore the National Servicemen offer a reasonable though somewhat biased sample of the young adult males of Singapore of the age group now between 20 and 22 years of age. Furthermore, comparisons between the oral conditions of the three major racial groups comprising

* Carried out as part of an assignment with the University of Malaya sponsored jointly with the Government of Canada under terms of the Columbo Plan for South and South-East Asia.

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these National Servicemen would appear to be entirely justifiable.

SELECTION OF SAMPLE

At the time of the survey there were a total of 2,601 National Servicemen, approximately equally divided between the Civil Defence Corps (1,358) and the Singapore Military Forces (1,243) and included a total of Chinese of 1,863, of Malays 476 and of Indians and Pakistanis 179. The total numbers of National Servicemen of each racial group were also approximately evenly divided between the two units (Table I).

TABLE I
Singapore National Servicemen—Total Strength by Units and Racial Groups

UNIT	Racial Group				
	Chinese	Malays	Indians & Pakistanis	Others*	TOTAL
Civil Defence Corps....	1027 (55%)	209 (44%)	85 (48%)	37	1358 (52%)
Singapore Military Forces...	836 (45%)	267 (56%)	94 (52%)	46	1243 (48%)
TOTALS.....	1863 (100%)	476 (100%)	179 (100%)	83	2601 (100%)

*Includes minority racial groups such as Arabs, Ceylonese, Eurasians, Europeans, Jews, etc.

However, it is reported[1] that National Servicemen in the highest medical category and with higher or middle educational standards were allocated to the Singapore Military Forces, whilst those in the second medical category with higher or middle educational standards were allocated to the Civil Defence Corps. It is also understood that the educational standards of those posted to the Singapore Military Forces were, on an average, higher than of those posted to the Civil Defence Corps. Those detailed for the Singapore Military Forces were subjected to a further medical examination by which of those so detailed approximately 4% were rejected for training.

Since the co-operation of the two organizations in making available subjects for dental examination was entirely dependent upon their goodwill, the survey of necessity was arranged to incur the minimum of disruption to their training programs. Precise methods of random sampling were therefore, under the circumstances, not possible. Nevertheless two basic principles were observed. Every available individual had, as far as was possible, an equal chance of being selected into the sample, and every endeavour was made to have the sample proportionately representative of the total population of National Servicemen.

At the time of the survey, the Civil Defence Corps had received in all, three intakes of National Servicemen. The first intake had already received training, had been transferred to the reserve and therefore was not available. The second intake were under training one evening each week and the third intake under training every alternate week. On the week allocated for the survey, it was arranged that two examining teams would examine a total of approximately 50 subjects within the 1½ hours available on each of the five evenings. All Malay, Indian and Pakistani National Servicemen attending for training on these evenings were scheduled for examination. The Chinese National Servicemen selected for examination were taken by complete training classes of both sec-

ond and third intakes. The total numbers within these classes selected were proportionately representative of the total numbers undertaking various types of training, i.e., warden, rescue and headquarter duties. There were no refusals for dental examination amongst those nominated.

With the Singapore Military Forces it was arranged to visit their week-end training camp on four successive Saturday afternoons. On these occasions 6 of the 7 units comprising these forces were in camp. Again all Malay, Indian and Pakistani National Servicemen on parade were detailed for examination, and the balance of the numbers required were made up of Chinese National Servicemen detailed by the unit commanders. It had previously been reported that National Servicemen allocated to Singapore Military Forces for training were arbitrarily allocated to units on no basis of selection whatsoever. In addition a single examining team attended two evening training periods, when all Indian and Pakistani National Servicemen who were on parade and who had not previously been examined, received the required dental examination. Again there were no refusals by subjects to participate within the survey.

By the above procedures, a total of 449 National Servicemen were examined and comprised 196 Chinese, 180 Malays and 73 Indians and Pakistanis. The subjects within each racial group within the sample were approximately equally drawn from the Civil Defence Corps and the Singapore Military Forces (Table II).

TABLE II

Singapore National Servicemen—Sample Totals by Units and Racial Groups

UNIT	Racial Group				
	Chinese	Malays	Indians & Pakistanis	Others	TOTAL
Civil Defence Corps...	103 (53%)	80 (44%)	38 (52%)	—	221 (49%)
Singapore Military Forces...	93 (47%)	100 (56%)	35 (48%)	—	228 (51%)
TOTALS.....	196 (100%)	180 (100%)	73 (100%)	—	449 (100%)

This dental epidemiological study was carried out in accordance with the standardized methods and criteria previously described[2] and published[3].

The effects of diagnostic bias of individual examiners were, it is believed, reduced to a minimum not only by employing multiple examiners (eleven) but also by ensuring that, as far as was practical, each dentist examined a cross section of the total sample group and not one specific sub-group thereof.

Information relating to the classification of the subject, e.g. race, date and place of birth for Civil Defence Corps personnel was provided by nominal rolls kindly prepared by their headquarters staff. For National Servicemen of the Singapore Military Forces, this information was mostly obtained from Identity Cards but in some instances by verbal questioning.

Immediately prior to each dental examination dental laboratory technicians completed the dental survey forms in respect to information relating to classification of each subject and their responses to the oral hygiene questions. Dental chairside assistants completed the recording of the clinical observations as dictated

by the dental examiner. All ancillary workers were carefully instructed in their duties prior to the actual survey. The average time for each examination was reduced to a minimum by eliminating time lost between observations and between subjects and not by reducing the time necessary for accurate clinical observations. By these methods each examining team completed, on an average, approximately 16 subjects per hour.

All additions and averages on each field survey form were first calculated by the dental examiner and again re-calculated before the information was converted on to mechanical punch cards. At that time any non-stated items were not punched as zero but left blank. In the computation of rates and averages shown in the tables, the actual number of responses for the items concerned has been used. When the number of non-responses was negligible, so that the quality of the information was not appreciably impaired, this variation from the actual number of subjects examined has not been indicated in the tables.

Results

An analysis of the results of this survey of a sample of the Singapore National Servicemen is presented in Table III.

TABLE III

Results of Dental Survey of Singapore National Servicemen by Racial Group

OBSERVATION	RACIAL GROUP					
	Chinese		Malaysians		Indians and Pakistanis	
A. DENTAL CARIES.						
Prevalence Rates.	Mean	S.E.	Mean	S.E.	Mean	S.E.
1. Mean number of restored, carious, or lost permanent teeth or crowns per subject (D.M.F.)	13.30	0.4339	8.41	0.4059	8.85	0.6605
2. No observable caries experience on the permanent teeth	Percent 0.00	S.E. 0.00	Percent 5.00	S.E. 1.62%	Percent 2.74	S.E. 1.91%
3. No caries defects	2.55	1.13%	7.22	1.93%	13.70	4.02%
4. One or more lost permanent tooth or crown	81.63	2.77%	62.78	3.60%	64.38	5.60%
B. ORAL HYGIENE.	Percent	S.E.	Percent	S.E.	Percent	S.E.
1. Poor oral hygiene	42.35	3.53%	48.33	3.72%	41.10	5.76%
2. Most common frequency—Twice daily	49.49	3.57%	67.22	3.50%	47.95	5.85%
3. Most common time—Night & Morning	47.96	3.57%	65.57	3.54%	46.58	5.84%
4. Most common instrument—Toothbrush	99.49	0.51%	100.00	—	84.93	4.19%
5. Most common material—Toothpaste	98.98	0.72%	98.33	0.96%	86.30	4.02%
6. Charcoal:—						
(a) Subjects using	0.00	0.00	0.56	0.56%	10.96	3.66%
Of those using charcoal:—						
(b) Subjects using padi-husk charcoal	0.00	0.00	0.00	0.00	0.00	0.00
(c) Subjects using salt with charcoal	0.00	0.00	100.00*	0.00	50.00	5.85%
C. BETEL CHEWING.	Percent	S.E.	Percent	S.E.	Percent	S.E.
Showing evidence	0.00	0.00	1.67	0.96%	2.74	1.91%
D. ATTRITION.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Average score	0.539	0.036	0.588	0.031	0.529	0.062
E. PERIODONTAL SCORE.	Mean	S.E.	Mean	S.E.	Mean	S.E.
Average score	0.91	0.051	0.70	0.045	0.86	0.096
Subjects locally born	99.5%		100%		95.9%	
Average age of subjects	21.45 yrs		21.41 yrs		21.40 yrs	
Number of subjects examined	196		180		73	

S.E. = Standard Error of the Mean or Percentage. *Refers to one patient only

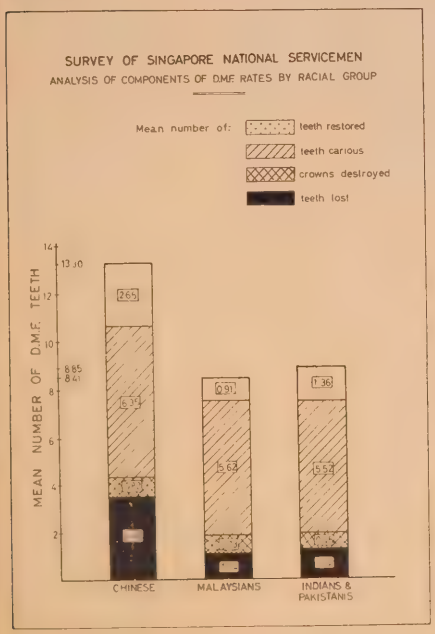
The average age of the Chinese was 21.45 years, of the Malays 21.41 years and of the Indians and Pakistanis 21.40 years.

Of the Chinese 99.5% were born either in Singapore or the Federation of Malaya, of the Malays 100% and of the Indians and Pakistanis 95.9%.

Dental Caries

The D.M.F. rate for the Chinese of this group of young adult males was demonstrated at 13.30 which was very significantly higher than that for the Malays (8.41) or the Indian and Pakistani group (8.85). There was no statistical significance to the difference between the latter two groups.

An analysis of the component elements of the D.M.F. rates of the three racial groups is presented in Figure 1. Criteria for the recording of these components were as previously described[2]. The mean number of "teeth prematurely lost" were significantly greater for the Chinese (3.48) than for the Malays (1.14) or for the Indians and Pakistanis (1.52). For the mean number of "crowns destroyed" there were no significant differences between the three racial groups, namely Chinese (0.82), Malays (0.73) and Indians and Pakistanis (0.45). Similarly for the mean number of "teeth carious" there were no significant differences between the Chinese (6.35), Malays (5.62) and the Indians and Pakistanis (5.52). However, for the mean number of "teeth restored" this was very significantly greater for the Chinese (2.65) than for the Malays (0.91) but there was no significant difference between either of these rates and that for the Indians and Pakistanis (1.36).



The percentage of subjects showing no observable caries experience of the permanent teeth was nil for the Chinese, 5.00 per cent for the Malays and 2.74 per cent for the Indians and Pakistanis. The difference between the Chinese and Malays was highly significant, but that between the Chinese and the Indian and Pakistani group was significant, at the 5% level of confidence. The difference between the Malays and the Indian and Pakistani group was not significant.

However, the Indians and Pakistanis showed 13.70% with no caries defects, namely all caries treatment completed by restoration or extraction, or never needed. The difference between this percentage and that for the Chinese (2.55%) was highly significant. Amongst the Malays those with no caries defects represented 7.22% of the total and which was significantly less than the percentage for the Indian and Pakistani group, and significantly greater than the percentage for the Chinese.

Of the Chinese (81.63%) had lost one or more permanent tooth or crown which was a very significantly higher percentage than that for the Malays (62.78%) or the Indian and Pakistani group (64.38%). There was no statistical significance to the difference between the latter two groups.

Oral Hygiene

Poor oral hygiene was noted to the greatest extent amongst the Malays (48.33%), but the difference between this group and the Chinese (42.35%) and the Indian and Pakistani group (41.10%) were only significant at the 5% level of confidence. The difference between the latter two groups was not statistically significant.

The most common frequency for oral hygiene practices was reported by all racial groups as twice daily. Of the Malays 67.2% reported this frequency, of the Chinese 49.5% and of the Indians and Pakistanis 48.0%.

Almost similar percentages of each of the racial groups reported that oral hygiene was carried out at night and in the morning.

All groups reported the toothbrush was the most common instrument used. Of the Malays 100% reported that they used a toothbrush, of the Chinese 99.5% and of the Indians and Pakistanis 86.3%.

Approximately similar percentages of each of the racial groups reported using toothpaste. However, it is of some interest to note that of the Indian and Pakistani group 11.0% used charcoal and of these 50% used salt with the charcoal.

Betel Chewing

Amongst this group of young adult males there was very little evidence of betel chewing. Only 2.74% of the Indian and Pakistani group showed such evidence, 1.67% of the Malays, and none of the Chinese.

Attrition

Attrition was evident in all groups to a small degree. The average attrition score for the Chinese was 0.54, for the Malays 0.59 and for the Indians and Pakistanis 0.53. No differences between these scores were significant. An average attrition score of 1.00 would have resulted for a subject if each molar tooth present had showed hard shiny facets on the enamel.

Periodontal Disease

The average Russell Periodontal Score[4] for the Chinese was 0.91, for the Indians and Pakistanis 0.86 and for the Malays 0.70. The difference between the scores for the Chinese and Malays was highly significant but there were no other significant differences. For a subject an average periodontal score of 1.00 would have resulted if associated with each tooth present a mild gingivitis was present or if adjacent to half of the teeth present there was evident gingivitis, but without pocket formation.

Discussion of Results

Comparability between the results of this and previous dental epidemiological studies is difficult, and this difficulty will of course continue until standard methods become generally accepted[5]. For example, in computing D.M.F. rates the number of carious teeth per individual as reported by different examiners has been shown by Deatherage, Wilson & Ledgerwood[6] to be possible of varying as much as 47% which, it is believed, could be significantly decreased by the establishment of simple criteria. The need for establishing simple but adequate criteria for the recognition and recording of carious lesions was recognized at a conference sponsored by the American Dental Association in 1953[7]. Simple but adequate criteria are also necessary, and should be reported, for other components of the D.M.F. rate and for other aspects of dental epidemiology.

However, with this proviso in mind, Table IV compares D.M.F. rates reported by previous surveys of young adult males with the results of this study and with the results of a survey of 15 year-old Canadian school children. It will be noted that Hollander and Dunning[8] (1939) reported an average of 15.72 D.M.F. teeth for a group of 875 males of the age-group 20-24 years, being employees of all types of a very large organization in New York City. Klein[9] (1941) described a survey of 641 young adult males of West Virginia

TABLE IV
Comparison of D.M.F. Rates Reported for Groups of Young Adult Males and a Group of 15-year-old Canadian School Children

Author	Year	Locale	Subjects	Total Examined	Age Groups in years	Mean D.M.F.
Hollander & Dunning.	1939	New York City	Male employees. All types.	875	20-24	15.72
Klein.....	1941	W. Virginia & Maryland	Selective Service Board Candidates.	641	21	14.5
Dunning.....	1944	United States	Midshipmen, U.S. Navy	1,208	21.6*	9.78
Miller.....	1943	United Kingdom	British Army Enlistments		21	10.7
McCombie....	1956	British Columbia Canada	School children	699	15	12.7
McCombie....	1957	Singapore	National Servicemen:			
			Chinese:	196	21.45*	13.30
			Malays:	180	21.41*	8.41
			Ind. & Pakistani:	73	21.40*	8.85

*Mean age of the group.

and Maryland, U.S., who appeared before the Selective Service Board preparatory to military service. For the 21 year-olds of this group, an average D.M.F. rate of 14.5 teeth was reported. However, Dunning[10] (1944) following examinations of 1,208 midshipmen of the U.S. Navy with an average age of 21.6 years recorded an average of 9.78 D.M.F. teeth. Nevertheless, it is observed[11] that this group had previously received a very high level of dental care. Miller[12] (1943) in a survey of British Army enlistments reported for 21 year-olds an average D.M.F. rate of 10.7 teeth. The above surveys will be noted as reporting average D.M.F. rates for males of a similar age to that of the Singapore National Servicemen.

In addition it is also perhaps permissible to make some comparisons between the results of this survey with another carried out in 1956 under the direction of the author[13], since in both cases were utilized almost precisely identical criteria for the computation of D.M.F. rates. The former survey comprised 4,500 school children of British Columbia and the oldest age group of 15 years included 699 children of both sexes. For that group the mean D.MF. rate was established as 12.7 teeth per child (standard error 0.2).

This survey of Singapore National Servicemen with an average age of 21.4 years demonstrates a mean D.M.F. rate for the Chinese of 13.30, for the Malays of 8.41 and the Indians and Pakistanis of 8.85 teeth. Between the D.M.F. rates for these Chinese and the 15 year-old children of British Columbia there is no significant difference, but the Malay and Indian and Pakistani groups have significantly lower D.M.F. rates.

Therefore after reviewing all the above evidence it would appear likely that at least up to the age of 21 years the Chinese of Singapore suffer dental caries experience to a degree no greater than the citizens either of Canada or the United States, and the Malay and Indian and

TABLE V

Comparison of Percentages of Subjects of Dental Surveys Reported as Showing No Dental Caries Experience

Author	Year	Locale	Subjects	Age Group in years	No caries experience
Stoughton & Meaker.....	1922	United States	Male school children	18 19	0.0% 0.0%
Brekhus.....	1941	University of Minnesota	Male students	18	1.3%
White.....	1944	United States	Naval Aviation Cadets	—	3%
Montelius.....	1933	Peiping, China	Majority University students	20-24	42.8%
Sarkar.....	1939	India	School children	19	92%
Shourie.....	1941	India	School children	17	45.7%
McCombie.....	1956	British Columbia Canada	School children	15	1.5%
McCombie.....	1957	Singapore	National Servicemen: Chinese: Malaysians: Indians & Pakistanis:	 21 21 21	 0.00% 5.00% 2.74%

Pakistani groups suffer dental caries to a considerably lesser degree.

This conclusion is supported to some extent, as would be anticipated, by comparing the percentages of subjects with no observable caries experience of the permanent dentition with those reported in previous surveys (Table V). However, at this age level all percentages are low, and without knowledge of the criteria or of the relevant standard errors, so seldom reported, strict comparisons are not possible.

In 1932, Stoughton and Meaker[14] reported examinations of 12,435 children of the United States between 6 and 19 years of age, and of the 18 and 19 year-old boys 100% had one or more D.M.F. teeth. Brekhus[15] (1941) reported amongst 18 year-old University of Minnesota male students examined in 1939, only 1.34% with no caries experience. After the examination of 800 U.S. naval aviation cadets (age not stated), White[16] (1944) reported 3% were caries free.

The survey of British Columbia children[13] referred to previously (using the same criteria as for this survey) demonstrated that, amongst the 15 year-olds, those having no observable caries experience of the permanent dentition was 1.5% (standard error 0.5%). Within the present survey those exhibiting no observable caries experience was nil for the Chinese National Servicemen, 5.00% of the Malays and 2.7% of the Indians and Pakistanis. The difference between the Chinese and the 15 year-old children of British Columbia is significant only at the 5% level, whilst the percentage for the Malays is significantly higher. The difference between the Indian and Pakistani National Servicemen and the Canadian 15 year-olds is not significant.

During 1930-1933 Montelius[17] examined 4,474 Chinese, the males being largely students of two universities in Peiping, although a few hundred soldiers and industrial workers were included. He reported that of the males aged 20-24 years,

42.8% were without caries. In India, Sarkar[18] (1939) reported that of a group of 19 year-old school children of both sexes, 92.0% showed no evidence of decay experience, whilst Shourie[18] (1941) reported 45.7% for a similar group of 17 year-olds.

From this very limited evidence it would appear likely that the Chinese and the Indian and Pakistani males resident in Singapore of the 21 year-old age group perhaps suffer dental caries to a considerably greater extent than some subjects of comparable age resident in their respective countries of origin.

Observations as to the percentage of a group showing no caries defects, i.e. all caries treatment completed by extraction or filling, or never needed, are of course influenced by the level of dental treatment previously received. It is to be noted that of the Chinese National Servicemen of Singapore none evidenced no dental caries experience but 2.55% had no caries defects. For the Malays 5.00% had no caries experience but 7.22% had no caries defects, and for the Indian and Pakistani group whilst only 2.74% had no caries experience no less than 13.70% had no caries defects. However, in comparison the British Columbia survey[13] showed for the 15 year-olds that whilst only 1.5% had no caries experience of the permanent dentition, 16.4% had no caries defects. There is, however, no statistical difference between the percentages with no caries defects for the 16 year-old Canadian children and the 21 year-old Indian and Pakistani Singapore National Servicemen. The percentages of both Chinese and Malay National Servicemen with no caries defects are very significantly lower than for the 15 year-old school children of British Columbia.

The percentage of a group having lost one or more permanent tooth or crown is affected not only by the past caries experience but also to some extent by the number of extractions carried out in lieu of conservative treatment, and inversely, by the success of dental treatment provided to maintain in good health the permanent dentition. It is noted that of the Chinese Singapore National Servicemen 81.63% had lost one or more permanent tooth or crown, of the Malays 62.78% and of the Indians and Pakistanis 64.38%. The 15 year-old children of British Columbia showed 47.7% having lost one or more permanent tooth or crown[13].

Strict comparison of the status of oral hygiene of the Singapore National Servicemen and the 15 year-old Canadian children is not possible. In British Columbia poor oral hygiene was recorded if the child had either green or orange staining or obvious deposits of materia alba on the gingival third of two or more teeth. In Singapore poor oral hygiene was noted if materia alba (not including calculus) was present on the gingival third of more than one incisal tooth. Bearing in mind the difference between these criteria it can be noted however that the Canadian 15 year-old children[13] demonstrated 42.2% with poor oral hygiene which is a similar percentage to those reported for the three racial groups of Singapore National Servicemen, 42.4%, 48.3% and 41.1%.

However, although all racial groups of the Singapore National Servicemen reported a very high percentage using a toothbrush (99.5%, 100.0%, 84.9%) the effective use of the toothbrush may be doubted in view of the above percentages showing evidence of materia alba being present on the incisal teeth. Nevertheless it must also be noted that the examinations of these subjects were all carried out in the afternoon or early evening. Therefore, perhaps the deduction should be that dental health education is required in Singapore to change the existing pattern of oral hygiene from being carried out by the majority at night and in the morning, to being carried out immediately after meals.

Regarding the prevalence of betel chewing or attrition it is regrettable that no comparable data would appear, as yet, to be available.

However, for the comparison of prevalence rates of periodontal disease data made available by Russell (and awaiting

TABLE VI
Comparison of Periodontal Scores Reported for Young Adults

Author	Locale	Total Examined	Mean age in years	Mean Score
Russell.....	U.S. Urban Communities:			
	White:	592	25.7	0.44
	Negro:	110	25.4	0.48
Russell.....	Boulder, U.S. (0.0. p.p.m.F)*	51	22.4	0.47
	Colorado Springs, U.S. (2.5. p.p.m.F)*	72	22.7	0.33
McCombie.....	Singapore: (Less than 0.2 p.p.m.F)*			
	Chinese:	196	21.5	0.91
	Malays:	180	21.4	0.70
	Ind. & Pakistanis:	73	21.4	0.86
Russell.....	U.S. Urban Communities:			
	White:	731	35.0	0.79
	Negro:	156	34.9	1.42
Russell.....	Colorado Springs, U.S. (2.5 p.p.m.F)*	101	27.5	0.39
		82	32.2	0.66
		124	39.6	0.91

*Fluoride content of water supply.

publication) are presented in Table VI together with the results of this survey. Within the surveys carried out by Russell and his co-workers it is known that precisely the same simple criteria[4] were used, and therefore strict comparison between these surveys and the survey of Singapore National Servicemen appears justified.

It will be noted that of four groups within the United States of America and of an average age between 22.4 years and 25.7 years the mean periodontal scores were between 0.33 and 0.48. The scores in Singapore with a mean age of 21.4 years were for the Chinese 0.91, for the Malays 0.70 and for the Indians and Pakistanis 0.86. These scores appear to be comparable with citizens of Colorado Springs with a mean age of 32.2 years and with a score of 0.66, and with a mean age of 39.6 years and a score of 0.91 and also with the white population of U.S. urban communities having a mean age of 35.0 years and a score of 0.79.

It is therefore concluded that at the age of 21 years, the males of Singapore would appear to suffer periodontal disease to a greater degree than the 22 or 25 year-olds of the United States and perhaps are at approximately the same level of periodontal disease as the 35 year-old white urban citizens of that country.

Associations

The first association to be tested was that perhaps existing between the dental caries experience (D.M.F. rates) and the status of oral hygiene (those demonstrating or not demonstrating poor oral hygiene). Within each of the racial groups, such an association could only be demonstrated for the Malays at the 5% level of confidence. However, when the results of all racial groups were combined a highly significant association was demonstrated (Table VII).

However, no association was shown between dental caries experience and

TABLE VII

Dental Survey of Singapore National Servicemen Associations Between Observations

(a) Dental Caries Experience and Status of Oral Hygiene.

Oral Hygiene Status	D. M. F. Rates				Total subjects all races
	0-6	7-12	13-18	19 & over	
Materia alba absent	84	87	56	22	249
Materia Alba present	46	70	52	32	200
Totals	130	157	108	54	449

$\chi^2 = 20.737$

(b) Average Periodontal Scores and Status of Oral Hygiene

Oral Hygiene Status	Average Periodontal Scores				Total subjects all races
	0-0.4	0.5-0.9	1.0-1.4	1.5 & over	
Materia alba absent	126	65	29	29	249
Materia alba present	37	71	48	44	200
Totals	163	136	77	73	449

$\chi^2 = 51.898$

(c) Average Periodontal Scores and Frequency of Oral Hygiene.

Oral Hygiene Frequency	Average Periodontal Scores				Total subjects all races
	0-0.4	0.5-0.9	1.0-1.4	1.5 & over	
Once Daily	34	41	30	27	132
Twice Daily	95	80	37	41	253
More than Twice Daily	31	13	9	5	58
Totals	160	134	76	73	443*

*Balance of subjects (6) reported other frequencies of oral hygiene in numbers too small to be utilized.

$\chi^2 = 17.201$

frequency of oral hygiene reported by the subjects.

To endeavour to show any possible relationship between caries experience and timing of oral hygiene, were calculated the mean D.M.F. rates for those subjects reporting that they practised oral hygiene "only in the morning", "night and morning" and "after meals". There were no significant differences between the D.M.F. rates for these three groups within any one racial group. However, it may be noted

that for all subjects of all races the mean D.M.F. rate for those reporting oral hygiene "only in the morning" was 11.09, for the group reporting "night and morning" the rate was 10.43 and for those reporting "after meals" it was 9.97, although the differences between these rates are not statistically significant.

No significant association could be demonstrated between dental caries experience and either the average attrition scores or the average periodontal scores at this age level.

Nor could any association be shown to be likely between the average attrition scores and the average periodontal scores for this group.

However, a statistically significant association was demonstrated between the average periodontal scores and the status of oral hygiene for both the Chinese and Malays. Nevertheless this was not possible to show for the Indian and Pakistani group. For the combined results for all racial groups a very significant association was demonstrated (Table VII).

Between the average periodontal score and the frequency of oral hygiene reported by the subjects within each of the racial groups no association could be demonstrated except at the 5% level of confidence for the Indian and Pakistani group. However, combining the results of all racial groups a highly significant association was demonstrated. (Table VII).

Summary

1. A dental survey of a sample of Singapore National Servicemen is reported. This group, having an average age of 21.4 years, totalled 499 subjects and included 196 Chinese, 180 Malaysians and 73 Indians and Pakistanis. All but four of the whole group were born in Singapore or Malaya.

2. A standard method for dental epidemiological studies has been utilised.

3. A significant difference in dental caries experience has been demonstrated within this group between the Chinese with a D.M.F. rate of 13.30 as compared with the Malaysians at 8.41 or the Indians and Pakistanis at 8.85.

4. Results of this survey also suggest as likely that:—

(a) Up to the age of 21 years, the Chinese of Singapore suffer dental caries experience to a degree no greater than citizens of Canada or the United States, and the Malaysian and the Indian and Pakistani groups considerably less.

(b) The Chinese and the Indian and Pakistanis of Singapore at 21 years of age suffer dental caries to a considerably greater degree than some residents of comparable age in their respective countries of origin.

(c) At the age of 21 years the males of Singapore suffer periodontal disease to a greater degree than 22 or 25 year-olds of the United States.

(d) Dental health education in Singapore should stress oral hygiene being practised immediately after meals.

5. Within this survey statistically significant associations were demonstrated between:—

(a) dental caries experience and status of oral hygiene

(b) average periodontal scores and status of oral hygiene

(c) average periodontal scores and frequency of oral hygiene.

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Dentist's Plus*

E. T. CLEVELAND, D.D.S., Montreal, Quebec.

One usually has a title to one's subject, and mine is somewhat of a "paraphrase" from an editorial which I read recently under the heading of the "Physician's Plus", which I have changed to "Dentist's Plus" and I quote in part.

"The dentist, as everyone of you is fully aware, has to prepare himself by long and rigorous training. So complex has advanced education become for the dental student that during his period of study, he has very little time for extra-curricular activities or interests in other fields. Yet, if he is to become a good dentist and remain a whole person, he must know much more than the practice of dentistry, in itself." The miracle is that so many do. The tragedy is that so many do not.

Our profession is, I think, aware of this, and one frequently hears criticism and suggestions to overcome these deficiencies of knowledge. I would like again to quote in part from an address made some time ago, at Queen's University, by Dr. Wilder Penfield, whom you all know by reputation as one of the world's most skilled neuro-surgeons, an outstanding author, and a man of rare culture. It seems most applicable at this time.

"It is not enough," he said, "for universities to train," and here I substitute dental for medical, "It is not enough to train students in basic science, and in technique. The student must be more than a technician. He should read much more than he does of good and informative literature. He should be able to express himself well in English, and to write with clarity and perception." I inject the note here, that any of you who have to do with the correction of examination papers, will appreciate this thought.

"The student should concern himself with the 'Arts', or have some hobby to improve his knowledge of interests, apart from his profession. These surely are not undue requirements for a man who is to be a counsellor to educated men and women, and as a keeper of such an important division of the health scheme. Universities that, by their curricular organization, do not encourage physicians and dentists to make a good beginning in the humanities before their immersion in the waters of biological or dental studies, are permitting them to graduate into practice with a cultural handicap."

What Dr. Penfield stressed is not so much that the universities change their curricula to overcome these deficiencies, as to imply that we, the graduates, do something about ourselves after graduation to improve our way of life; to plan for reading, research, inspirations, and associations with others, apart from our profession. To those of you who wonder how others have accomplished this, I can only suggest a study of the lives of great physicians, and in our own field, a great dentist. His name was Dr. Percy R. Howe.

His association was largely with the Forsyth Infirmary. He was a restless, energetic, imaginative, observant, and adventurous type, who was so exceptional in all his qualities that he could dream, and yet be master of his dreams. He came early to the realization that Dentistry must learn to think of the patient as a whole being, and not as a mammal sprouting teeth, which are separate from the body.

The Address of the President to the Montreal Dental Club, October 23, 1957.

I commend to you for reading, the life of Dr. Howe, by Rollo Walter Brown, and published by Harvard University. It is an inspirational reading for every dentist and student, and gives a picture of a comparable Osler, or Penfield, but in our very own domain.

This great Howe, it has been remarked, was far more appreciated by physicians and scientists, than by his dental colleagues, because of his research, and observations. It is so aptly said, "A great life is a thought in youth, wrought out in ripening years."

Thus, some change in dental education and thought may not be amiss. Our profession today, boasts of keenly interested dental investigators who through their daily efforts, in laboratories, hospitals, institutions, have advanced dental science as an integral part of medicine and surgery, so that the complete health picture demands our unit for its fulfillment. The new field of oral medicine has gone far in its application of medicine to dental problems. Great strides have been made in our specialties — those of orthodontics, oral surgery, periodontics, endodontics, and nutritional studies. Thus, professional knowledge is never static. But let us again dwell on the responsibility that is ours, and endeavour not only to follow new developments within our daily routine, but to expand on the horizons of literature, art, and music, and partake of other cultural advantages, so that we may become better informed, better able to guide, better able to advise, and better able to assume our well earned recognition as clinicians in a highly specialized and indispensible division of the advanced health programme.

Dr. James Mather of the department of Public Health at the University of British Columbia, in his address to the Associated Gold Foil Clubs, entitled, "The Changing Picture of Professional Education," stresses along these lines; "Our membership in the healing professions, gives us unique privileges, but also many additional responsibilities. If we value our position we would do well to take a long and critical look at ourselves, and make sure that we can, in fact, make a contribution far above and beyond that of a technician. If we sit back with a complacent attitude feeling that we are unique and invulnerable, we may have a rude awakening, and we shall have no one but ourselves to blame."

Dr. Mather's committee at the University also recommends the following six points to be stressed in the education of the undergraduate medical or dental student:

1. To impart a "body" of knowledge.
2. To develop skill in the collection, assembling, and interpretation of data.
3. To convey an understanding of the scientific method of thought and practice.
4. To cultivate habits of self education.
5. To foster a spirit of moral and social responsibility.
6. To promote the development of personal maturity.

Some years ago, I wrote an article for the Journal of the Canadian Dental Association, in which I dared to predict that the future of dentistry lay basically in more knowledge of medicine and surgery than in its technical departures. Since then my views have been substantiated by many writers and speakers, among them, our late Dean Mowry, who frequently warned us of the perils which are still thorns in our sides.

A visit to some cities and a view of the advertising by neon lights can certainly be "illuminating" as a reminder that we still cannot be smug, and that much more education is needed to enlighten a susceptible public away from the charms of free gasoline in enticement to dental procedures.

A newspaper article, which I read some time ago, stressed the estrangement of dentistry from medicine, when, in the early part of the 19th century, physicians and dental leaders were unable to agree. Hence the establishment of the first separate college of Dental Surgery, in Baltimore, in 1839.

The degrees of Doctor of Dental Medicine are given now, by Harvard and Tufts Universities, as a recognition of the close relationship of medicine and dentistry, and a desire on the part of the educators, to promote, maintain and further the knowledge of basic physiological processes and thus associate the studies in all the departments, for an overall beneficial co-operation from each health unit.

There are many who feel, that within the next several years, fundamental advances in dental education, will require revolutionary change, in which the practitioner in dentistry will alter his perspective and training to the greater demands of the future, and *all* dentists, will be physicians. This radical departure is thought provoking, is it not, but so are so many others, in our daily life.

The demands upon us clearly establish the need for maximum understanding with those we march beside, but not lag behind, and a more thorough knowledge of the fundamental sciences, interpreted in certain procedures by technical operations, should be our goal.

Changes will and must take place in a world where research, manners, and customs are forever being remodelled to meet the changing times. It is we who have the great responsibility for the future. Our professional attainments must keep pace. Our cultural interests must increase. The public is a harsh and oftimes unkind judge and a chain is just so strong as its weakest link. There are still many weak links. Adverse changes can take place also.

Can we be sure that there are not those who use the profession for selfish and unworthy practice, undermining the status to which so many have given so much to maintain and discipline. Our future cannot be controlled by small executive bodies alone. Its behaviour, its recognition, its strength, its over-all effect must emanate from each and every member whose daily dignity unconsciously reflects the direct results of cultural progress within ourselves.

Dentistry is a partner of all sciences, all professions. A partner in all the arts.

If there is such a thing as a profession, as a concept, distinct from a vocation, it must be consistent in the ideals which its members maintain, the dignity of character which they bring to the performance of their duties, and the austerity of self-imposed ethical standards. To constitute a "true" profession, there must be ethical tradition, so potent, as to bring into conformity members, whose personal standards are at a low ebb, and to have an elevating and ennobling effect on those members. This cannot be created by merely passing resolutions, nor can it take place overnight.

Thus to face tomorrow with the thought of holding the standards of yesterday, is to envision life at a standstill. Even that which we now do well, must be done better.

Before I close . . . In an earlier part of this address, you have heard me use the word "inspiration". While I was typing the final summary of what I have said to you today, on Sunday evening, October the thirteenth, I stopped for an hour to listen to the broadcast from Government House, in Ottawa, of Her Gracious Majesty, the Queen. A particular part of her inspirational speech struck me as applicable to each and every one of us, when she said:

"Sometimes the toil and strain of every day life seems disappointing and discouraging. Then along comes some circumstance or event which gives us renewed zest, and a satisfaction, about our particular niche in life, and we again feel happiness in our accomplishments."

Isn't it true that these frailties of human endeavour happen to all of us some days, sometimes, and then the outcome of something creative, or the recognition of a successful climax to our efforts inspires us for the future, and we feel the worth of our abilities. These sensitive contrasts are part of all our lives and continually change our perspective from the oftimes monotony of duty, to stimulated acceleration toward ideals and perfection.

A Suggested Method of Constructing Space Maintainers

KENNETH M. WALLEY, D.D.S., Vancouver, B.C.

When one deciduous molar is missing, the other deciduous molar is used as the abutment tooth for the space maintainer. When both deciduous molars are missing, the first permanent molar is used as the abutment tooth.

To gain separation between the abutment tooth and the one approximating it, .020 brass ligature wire is put in a few days before. If the arm of the space maintainer is to be mesial to the abutment tooth, it is advisable to cut a small step on the distal surface of the deciduous tooth approximating the space; the bottom of the step to be just above the gingiva. The step will act as a rest to prevent the abutment tooth from tipping mesially and prevent the arm of the space maintainer from impinging on the gingival tissue.

The suggested band material for the abutment tooth is Williams Paloy .008 x .18.

A sharp right angle bend is made in the band material about 1/16" from the end. The material is fashioned into a loop approximately the size of the tooth. This loop is placed around the tooth so that the piece with the sharp right angle bend is pointing buccally about the centre of the mesiobuccal cusp. The material is adapted roughly with the fingers to the tooth, the free end crossing over the mesio-buccal cusp. The loop of band material is pressed gingivally so that it lies about 1/32" above the marginal ridge. The band is pinched with a Howe or Angle band forming pliers and soldered with 18K solder. The soldered band is adapted to the tooth by pressing it gingivally with a flat serrated burnisher and then burnished with a round burnisher. It is necessary to trim the gingival of the band to conform with the gingival tissues.

An impression is taken in compound with the band in position on the tooth. The band is removed from the tooth and placed in the impression. The separating wire is replaced. A thin film of wax is flowed on the inside of the band on the lingual and buccal which is to form the air space for soldering. The band is held in the impression with a little wax. The impression is poured in stone.

A piece of .300 hard gold wire is adapted so that it runs from the centre of the buccal surface of the band down to the buccal of the ridge opposite the missing tooth along the buccal of the ridge to the next tooth in the arch. It is then bent over the ridge to contact this next tooth and run along the step previously mentioned; then onto the lingual of the ridge where it runs back to the abutment tooth, crossing it at the centre of the lingual surface of the band. The wire is soldered to the band with 18K solder.

The loop in the space maintainer should be sufficiently wide from buccal to lingual to allow the bicuspid teeth to erupt into it. The space maintainer is polished and tried in the mouth for adjustments and then cemented in place.

It is advisable that cases be called in at regular intervals to be checked, especially at the time for the eruption of the teeth for which the space maintainers are holding the space.

808 Birks Bldg.

Is A Preventive Dental Programme Worthwhile?

J. W. M. LAWRENCE, D.D.S., D.D.P.H., Brampton, Ontario.

For seven years, the writer has been the public health dentist in Peel County, bordering Lake Ontario just west of Metropolitan Toronto.

During this time the county, once predominantly agricultural, has had a significant urban and industrial development. The population, subject to a high degree of immigration and emigration, has numerically increased approximately two times.

Similarly, the elementary school populaton, initially about 7,000 is now almost 16,000 with a slight percentage increase in the primary grades.

The dentist-population ratio has been maintained with an increase of 14 practitioners to 29.

The aim of a preventive programme is to raise the standard of dental health by teaching the present-day knowledge for caries immunity to our young citizens; to promote oral cleanliness free from infection; to eliminate hindrances to normal growth of the face and jaws; to save teeth by inducing early and regular caries treatment.

Basically, it is an attempt, aided by motivated groups such as teachers and nurses, to build up mass conformity and mass acceptance of procedures focused upon the young groups.

Mass media in education such as adult group talks, classroom discussions, the press, radio, etc. do produce a beneficial result. But the most effective approach is through the smallest component of the mass — the individual. Individual examinations, coupled with explanatory remarks, words of encouragement and parent notification, establish good public relations and better motivation.

In contrast to the availability of school-age children, procuring pre-school age children is very difficult. In public health, the pre-school children are called the "lost ages", because very few places have programmes for them. Over the years, several attempts to induce attendance for purely dental consultation, have met with very poor response. It seems that this service must be tied to some project with stronger appeal. Each Spring, the writer participates in a school readiness programme which permits the examination of many four and five year olds, brought to the schools to register for the next Fall Term. This past Spring, in a six week period, 1,155 children were examined and consultations were held with approximately 1,000 mothers. About 40% required caries treatment and almost 10% showed various degrees of malocclusion, mostly as a result of habits. It appears that finger sucking is much more prevalent in new suburbia than in established villages or rural areas.

To show the trend in the state of dental health for the country, the following data pertains to total school examinations for the second and seventh years of the preventive programme. Inasmuch as the specific age group distribution is quite similar for both years, the percentages of improvement and reduction are the differences between crude total percentages.

To eliminate the possibility of the improved dental state having been imported, data for native-born children taken from a random sample, are also compiled for

comparison. Because of the small number of children involved in the sample, the statistical picture, while not as clearly defined as that above, is quite similar in trend. From this, we can assume that the efforts expended by those groups supporting a preventive programme are having a beneficial effect within the community.

Percentages of Caries-Immune Children

Age	1956–57	1951–52
5 years	29.3%	25.3%
6 "	17.6	18.5
7 "	12.8	11.5
8 "	9.3	8.7
9 "	7.0	4.6
10 "	5.5	3.8
11 "	6.4	4.0
12 "	4.6	5.4
13 "	4.4	3.6
14 "	3.4	3.6

All but three age groups show improvement for 1956–57.

Percentage of Improvement is 13.8%.

Percentages of Children with Open Cavities

5 years	43.5%	66.9%
6 "	52.5	69.9
7 "	54.7	76.8
8 "	48.8	78.4
11 "	39.5	73.9
12 "	43.0	71.5
13 "	49.0	72.7
14 "	56.0	82.6

The improvement for 1956–57 is considerable for every age group and is beyond element of chance.

Percentage of Reduction is 39%.

Percentages of Children with No Fillings Experience

5 years	31.3%	53.8%
6 "	33.0	52.2
7 "	32.0	48.8
8 "	26.2	42.6
9 "	18.1	36.0
10 "	16.3	33.8
11 "	16.1	32.5
12 "	17.3	28.4
13 "	17.6	28.4
14 "	19.1	30.3

Percentage of Reduction is 47.5%.

Percentages of Children with Completed Caries Treatment

Age	1956–57	1951–52
5 years	27.0%	8.0%
6 "	29.8	11.9
7 "	32.4	11.5
8 "	41.5	13.5
9 "	57.8	19.4
10 "	56.5	21.2
11 "	53.7	22.1
12 "	52.4	22.9
13 "	46.4	23.5
14 "	39.8	13.7

Percentage of Improvement is 166.6%.

Percentages of Children with Permanent Teeth Lost

9 years	7.6%	8.3%
10 "	15.5	16.5
11 "	17.6	21.9
12 "	23.8	32.9
13 "	30.8	39.3
14 "	37.2	51.0

Percentage of Reduction is 23% approx.

Percentages of Children with Deciduous Teeth Lost

5 years	20.6%	27.5%
6 "	33.7	39.4
7 "	45.0	53.1
8 "	44.7	56.0

Percentage of Reduction is 18% approx.

Summary

Children Caries-Immune.....improved 13.8%
Children with Open Cavities.....reduced 39.0%
Children with No Fillings.....reduced 47.5%
Children with Completed Treatment improved 166.6%
Children with Permanent Teeth Lost reduced 23.0%
Children with Deciduous Teeth Lost reduced 18.0%

In closing, I should like to pay tribute to those components of the community, notably school teachers, public health nurses, lay groups and practising dentists, who are making inroads against ignorance, negligence and apprehension. Obviously, little can be accomplished without the support of the people-at-large . . . submission by children to corrective measures and control, by parents, of the many factors of time, effort and money involved in parental responsibility. The results show that these problems are being surmounted.

Fédération Dentaire Internationale
XIIth International Dental Congress

Opening Session—Rome Congress, September 7th, 1957—Fédération Dentaire Internationale

The great Rome Congress has come and gone; the more than seven thousand representatives from no less than seventy-two countries have left Rome carrying with them an indelible memory of hospitality, friendship and professional brotherhood.

The week could very well have been spent in the huge hall housing the table demonstrations, or in lingering amongst

The Congress was not all business as this view would indicate. L to r: Dr. H. Parker Buchanan, British Dental Association Secretary; Mrs. W. H. Riley, Winnipeg; Dr. Don. W. Gullett, C.D.A. Secretary; Mrs. R. H. McDougall, Victoria and Mrs. Don W. Gullett.

220 odd stands of the Commercial exhibitors. Some idea of the size of the Trade Exhibition can be gleaned when one hears that there were no less than 2,000 participants in the exhibition alone.

For those who preferred to sit and watch a pictorial presentation of modern dentistry in every phase, there was a continual stock of films from all over the world. Through the medium of television, many of the more interesting demonstrations were shown throughout the week.

The inevitable difficulty of language inherent in large international meetings was well handled by a brilliant team of interpreters who provided a simultaneous interpretation in French, English, German, Spanish and Italian. During all the scientific reports and discussions, it was only necessary for the visitor to pick up a pair of headphones and turn a switch to receive the words of the speaker in any of the five official languages.

The Canadian and Czechoslovakian Official Delegates. Dr. Don W. Gullett, Secretary, C.D.A., and Dr. R. R. McIntyre, a past president of the C.D.A. were the official Canadian delegates. The three delegates on the right are from Czechoslovakia.

Dr. H. Parker Buchanan, Secretary of the British Dental Association and C.D.A. Secretary, Dr. Don W. Gullett, leaving the Congress Building.

Three Canadians having come from a busy session, l to r: Dr. J. C. Ward, Edmonton; Dr. W. J. Riley, Winnipeg; and Dr. E. T. Guest, of Toronto.

Round table discussions were organized amongst experts in a particular part of dentistry, and judging by the huge attendances during these meetings, this particular type of presentation is most popular and valuable to the listener.

The week preceding the Congress was taken up with meetings of the Council, Subcommittees and General Assembly of the FDI and the preparations of the Commissions of the Federation of their ensuing week's activities.

On Sunday afternoon, September 8th, in the Basilica of St. Peter, His Holiness Pope Pius XII graciously granted an audience to all the delegates of the Congress. The Pope praised the dental profession for its "care and patience . . . in the service of science and humanity" and pointed to recent advances in the field of paedodontics. "One ought," he said "to rejoice at the help given (by dentists) to parents in the delicate task of guiding the growth and harmonious formation of the personality of their children." He also commented on the advent of the high speed drill with the hope that its promise of eliminating "disagreeable sensations" for the patient would be confirmed.

Many events such as the visit to the Mayor at Campidoglio, the rendition of Verdi's "Aida" at the Theatre of the Terme di Caracalla by the Italian Opera Company, the Congress Banquet, the Congress Ball and the historical closing ceremony at which the Prime Minister of the Italian Government was present, were memorable occasions.

There will be other great Dental Congresses, so long as the FDI survives where men of vision and pride in their profession will meet and discuss and learn. The great Rome meeting, however, will long remain as an example to those who shoulder the responsibility of future Congresses; it will remain as an example of kindness and hospitality from our Italian colleagues who beckoned us to Rome as strangers and bade goodbye to us as friends.

ABSTRACTS

Pain Control in Dentistry for Children

JEROME L. FECHTNER, D.D.S.

It has been demonstrated in this study that dentistry for children can be done efficiently, painlessly and thoroughly by use of nitrous oxide-oxygen analgesia in combination with other pain control methods. With analgesia there is a loss of susceptibilty to pain with little or no loss of consciousness. Some complications of analgesia which must be recognized, include nausea, excitability and fear of the physical sensation in a small percentage (1%) of administrations. In view of the many advantages of analgesia in the routine practice of dentistry for children, the writer believes that analgesia deserves a place in the armamentarium of any dentist who desires to handle children. The technique should receive further study in the dental school and by trained anaesthesiologists. Those men who propose to administer analgesia, should be trained in general anaesthesia with subsequent clinical experience in analgesia. This is necessary to administer analgesia and to be prepared for all problems and complications which might arise.

The following advantages of nitrous oxide-oxygen analgesia are demonstrable:

1. The administration of analgesia is pleasant and painless.

2. Operative procedures proceed normally and easily in all or any quadrants of the mouth.

3. Much can be accomplished at each visit, thus shortening the length of dental treatment.

4. Analgesia is effective with the fearful, emotionally unstable 'problem' child.

5. The child is relaxed and unapprehensive under the effects of analgesia.

6. The child is unaware of the details and procedures, and sometimes has no memory of what has been done for him.

7. The child finds the experience of analgesia pleasant, and actually looks forward to his next appointment.

8. Analgesia is safe, with no allergies or idiosyncrasies.

9. Recovery is swift and uneventful by the time the child is ready to leave the office.

In addition to the many advantages, the writer recognizes that analgesia has certain drawbacks and limitations, as has any anaesthetic or pain control method. Current evidence, however, places nitrous oxide-oxygen analgesia in a favourable light as a pain control method, and should indicate a need for further clinical study, instruction and evaluation.

Journal of Dentistry for Children
Third Quarter, 1957

Dental Aspects of Radiation

W. O. CASTER, Ph.D., Minneapolis, Minnesota.

We have not heard the last of the atom or of the hazards of radiation. The atomic age is just starting. The problem of radioactive fall-out is probably more critical than is generally appreciated. As this fact becomes more generally known, public apprehension concerning radiation will increase. This will mean increased public resistance to diagnostic x-ray work of all types — including dental. There will probably be legislative attempts to control x-rays.

The great fear at present is centred on the genetic effects of radiation. Here the dental profession is on safe grounds. Until people start tearing down brick houses and throwing away luminous dial wrist watches, the dentist can feel perfectly at ease with his conscience with the absolute assurance that he is doing no real harm to the general public on this particular score. The only one that is likely to be hurt with scattered radiation is the dentist himself.

So much for scattered radiation. On the other hand, one must never forget what is in the direct beam of the x-rays. Here is where the doses are greatest. If there is ever to be legitimate criticism of dental x-ray, it will probably concern effects related to irradiation of the head. Present experimental evidence seems to indicate that normal dental x-ray techniques have a substantial margin of safety in this direction. Excessive irradiation to the head should be avoided, however. Caution is always in order. It is to the dentist himself and to those working with him that this word of caution is most important. The health record of the radiologist is not enviable. Surveys indicate that the dentist may be working more closely to the tolerance level than he fully appreciates.

North-West Dentistry
Vol. 36, No. 4, July 1957

A Critical Survey of the Methods of Instrument Disinfection and Sterilization

CHARLES G. MAURICE, D.D.S., M.S., Chicago.

The objective of sterilization and also of disinfection is the destruction of microorganisms which are or which possess pathogenic potential. Although there are many methods of doing this, it is important to select the most appropriate method in any situation.

The microorganisms of medical interest are bacteria, fungi (yeasts and molds), rickettsiae and protozoa. The viruses, although unlike microorganisms in some respects, are nevertheless included with them. Each group has members pathogenic to man.

Bacterial spores are the most difficult microorganisms to destroy. Because of this, proof of sporicidal effectiveness is evidence of capacity to kill all microorganisms.

Most terms relating to infection and

to destruction of microorganisms have undergone changes in meaning. Since scientific terms must connote exact meaning, a standard terminology in this field is highly essential.

Heat is the most reliable, least expensive, and the most easily carried out of the practical methods of disinfection as well as of sterilization.

The various methods of disinfection and of sterilization which utilize heat are boiling water, dry heat, heat in the form of saturated steam under pressure, hot oils, a special oil and water emulsion, flaming, and the molten metal sterilizer. Each method has its advantages. The autoclave method is probably the most nearly perfect of the methods which sterilize.

Ultraviolet light sterilizers for either disinfection or sterilization of instruments and surgical materials, have too many limitations to be of practical value.

It is well to remember that sources of infection other than contaminated instruments exist.

Although the new chemical disinfectants have solved the factor of safety, they do not destroy bacterial spores nor the more resistant nonspore forms such as the tubercle bacilli. They are also probably ineffective against the viruses of viral hepatitis.

The newer disinfectants fall into four chemical classes: Formaldehyde preparations, mercury preparations, phenolic compounds and quarternary ammonium compounds.

Although most alcohols possess bactericidal properties, ethyl and isopropyl alcohol are the only two which have been widely used as disinfectants. Of the two, isopropyl alcohol seems to be the better germicide.

Both ethyl and isopropyl alcohol are ineffective against bacterial spores.

Volatile germicides in the form of gases, vapors and fumes have proved unreliable and of little practical value in the disinfection and sterilization of instruments and surgical materials.

The Journal of the American Dental Assoc. Vol. 55, No. 4, October 1957

Comparative Clinical Evaluation of Radiographs Exposed with Films of Different Emulsion Speed

JACK BUDOWSKY, et al.

In order to investigate the effect of the use of faster emulsion speed x-ray film on radiograph quality (a study directed ultimately at the concept of decreasing the exposure of the patient and /or operator to x-radiation), evaluations of the quality of radiographs resulting from the use of faster and slower emulsion speed film exposed in general practitioners' offices were performed. All films had been processed under conditions customarily obtaining in the offices of the general practitioner participants in this study, in accordance with the investigators' directions. Blind clinical evaluation of the resulting radiographs by six members of the dental school oral diagnosis staff suggested that:

In terms of quality (individual excellence), use of the slower speed films was found to result in a larger number of radiographs adjudged "good". However, an almost equal number of films exposed with the faster radiograph film were also judged "good".

These findings particularly suggest that

it is possible for general practitioners routinely to obtain radiographs of high quality while using a fast film. Further study of some of the critical factors in exposure time, target-film distance, and processing may be rewarded by a technique using faster emulsion speeds which is productive of films of uniformly high grade excellence.

Further and increased study of the use and performance of radiograph films with faster emulsion speeds seems definitely warranted. However, where maximum excellence of image is essential, as in the study of difficult to diagnose lesions or when magnification of radiographs is anticipated, the continued use of the slower speed film is still indicated.

The New York State Dental Journal
Vol. 23, No. 8, October 1957

Your Dental Foundation; Its Present and Future

M. W. SMITH, D.D.S.

In June, 1957, the Wisconsin Dental Association Foundation Inc. was incorporated through the filing of its Articles with the Secretary of State at Madison and with the Registrar of Deeds at Milwaukee.

The purposes and objectives of the Foundation are to: (1) engage in, assist and contribute to the support of charitable, educational and scientific activities and projects; and (2) to create, maintain or contribute to the support of charitable, educational and scientific institutions, organizations, and funds of any and every kind. Included in the preceding purposes are activities, projects, institutions, organizations and funds which relate to dental science and to public health.

The Foundation is non-profit, and no part of the net earnings of the corporation may inure to the benefit of any private individual.

A foundation may be defined in various ways. One of the easiest to understand is that it is a non-profit organization, generally a corporation, which has as its purpose the acquisition and management of funds or other property which are devoted to benevolent, charitable, educational, scientific, religious or similar purposes. Depending upon its organization and powers, a foundation can conduct such functions directly, or it may make contributions to other organizations or funds which are conducting such activities.

It was necessary to organize a foundation because: (1) the State Dental Society was not organized for charitable or educational purposes outside of its own membership, or for conducting or supporting scientific activities. Since the Dental Society was incorporated by the Wisconsin Legislature more than 80 years ago, there has been a revolutionary expansion in dental education and science. This expansion continues to require large sums of money, for dental education and research are as costly as they are important.

(2) There has been an increasing degree of actual or threatened intervention by the government into some aspects of dentistry which could destroy the very independence of the profession if it becomes sufficiently entrenched. It is thus

necessary, as never before, that dentistry fulfill its own destiny in its own way.

(3) The income tax laws. In respect to the latter the Dental Society is organized only for certain prescribed activities on the part of its membership, which do not extend to student loans, assistance to disabled members, educational, or scientific projects.

The Foundation offers a legal device or vehicle for overcoming this serious handicap as it provides a means by which dentists and others can realize certain charitable, educational or scientific aims which they desire to support.

An obvious example of a charitable activity would be the building up of funds by the Foundation for the assistance of disabled dentists who were in financial need.

As examples of educational activity, the Foundation can make loans available to students, and as these loans are repaid, with moderate interest, they will constitute a self-perpetuating revolving fund. Other examples of educational activities in which the Foundation can engage, whereas individual dentists or the Dental Society cannot do so, or can do so less effectively, are the support of experimentation in improving dental educational methods, or the interpretation of dental science and achievements to the general public.

As for scientific activities, it should be self-evident that the field is almost unlimited. There is a critical shortage of personnel and funds in many fields of dental research at the present time. Yet the very future of the profession and its continued importance in the total field of public health depend upon adequate research, in terms of personnel, facilities and money.

The Journal of the Wisconsin State Dental Society
September 1957

A New Approach to the Topical Application of Fluoride For the Reduction of Dental Caries in Children

CHARLES W. GISH, et al.

The presently advocated procedure for topical application of fluorides requires 4 visits to the dental office once every 3 years in order to obtain the maximum benefit. As a result many dentists have not adopted the use of topical applications as a routine procedure. The anticariogenic effectiveness of a single application of stannous fluoride was compared with that of the conventional four applications of sodium fluoride.

A total of 554 second grade children from Montgomery County, Indiana, were used in this study, and all examinations were performed by the same dentists.

The children were divided into 9 susceptibility classes on the basis of previous dental caries experience and dental age. Within each susceptibility class they were then assigned to Group I (sodium fluoride) or Group II (stannous fluoride) on the basis of estimated caries expectancy.

One application of the solution of stannous fluoride was 21 per cent more effective in preventing new noncarious teeth from becoming carious than 4 applications of a 2 per cent solution of sodium fluoride. Even if the ability of the 1 application of stannous fluoride to prevent dental caries were only the same, the reduction in the number of treatments from 4 to 1 would be a worthwhile achievement.

Journal of Dental Research
Vol. 36, No. 5, October 1957

EDITORIAL

Licensure Arrangements—are they justified?

One of the occupational hazards of a dental editor is that his readers, if indeed he has any, are somewhat disposed to infer that his editorials represent association policy. While it is perfectly true an editor will often espouse a cause or action taken by his association, traditionally, editorial prerogative permits a much wider commentary. Occasionally an editor will promulgate an opinion which is quite at variance with the majority of his colleagues within the Association. This, of course, is as it should be because if everyone thinks alike then no one thinks. This editorial, we are certain, will not find favour with the majority of readers, but the subject is one which merits discussion and the editor takes full responsibility, as the opinions to be expressed are his own.

We have, in Canada and the United States, a multiplicity of regulations in respect to dental licensure. The British North America Act confers upon the provinces of Canada the right to legislate for health and education. Each province, therefore, possesses its official licensing board charged with the responsibility of determining who shall practise dentistry within its boundaries. In the United States, the State Boards of Dental Examiners possess similar authority.

Let us make one point very clear at the outset—we emphatically support the principle that the dental profession itself should have the responsibility of determining the educational requirements of those who propose to practise dentistry. This is a firmly established tenet of any profession, whose members are registered and provide to the public specialized services, that the profession is the only group capable of determining and understanding the various qualifications and requisites for membership in the profession. Surely it is not even arguable that a physician or group of physicians should not attempt to determine a curriculum for a Faculty of Law or a body of political economists try to develop the admission requirements or a curriculum of a dental school. Areas of specialized knowledge require the participation of persons trained in those areas.

Having said that, it is obvious, therefore, we believe the profession should have the indisputable right to determine whether or not the various schools of dentistry are selecting students with appropriate pre-professional training and once admitted that these students receive an educational course sufficient to permit them to provide a high standard of dental care to the public following graduation.

We emphatically, as previously stated, support the principle. Our concern is with the methods we employ to carry it out.

The Council on Dental Education of this Association, following the establishment of principles for the approval of

schools, appointed a most competent Survey Committee to assess the various Canadian dental schools in respect to their over-all relationship to the established principles. Eventually all five Canadian schools were approved by the Council and as an indication of the standards insisted upon, the comparable Council of the American Dental Association granted its approval to the Canadian schools as well. Thus the profession through its most capable voluntary bodies has assured itself that these schools are providing a high standard of dental education.

Let us, however, point to only one of several examples which could be cited, whereby our licensing arrangements appear to us, in view of the above, to be somewhat inconsistent.

In Ontario the Royal College of Dental Surgeons, in effect, accepts the final examinations of the Faculty of Dentistry of the University of Toronto as the licensure examinations for the class graduating from that faculty and providing the student possesses his qualifying certificate he can be registered in Ontario immediately upon notification by the Faculty to the Board that he has successfully completed his final examinations.

Similarly the same arrangement exists in Nova Scotia wherein the Nova Scotia Board accepts the examinations of the Faculty of Dentistry of Dalhousie University as the licensing examinations for the final year students from that institution.

The inconsistency, however, arises because the Ontario Board will not recognize, on the same basis, the Dalhousie graduate nor will the Nova Scotia Board accept the Toronto student. In each instance a further examination is required.

In effect what is being said in this situation? Is not the Ontario Board saying, "While we have confidence in the calibre of the graduate of Toronto we do not, however, look upon the Dalhousie graduate as being similarly qualified"? And is the Nova Scotia Board not expressing the same sentiments only with the geographic locations reversed? These are pointed questions but how can one avoid the obvious answers?

If this situation may appear somewhat incongruous even to the writer of this editorial, and one incidentally who has more than a moderate interest in the functions of licensing boards, how must the situation be regarded by someone not belonging to the profession?

Some time ago an organization of deans of dental schools in some of the southern states in the United States had some strong and pointed criticisms in respect to licensing examinations established in several states. Because, as a result of some of the examinations in certain states, many of even the most brilliant students failed to meet licensing requirements, it was obvious the deans considered many of the examinations were conducted with no other purpose in view than to bar dentists from entering these states. Such a situation is surely not applicable anywhere in Canada! Even the best provincial patient-dentist ratio approximates one dentist to 2,400 persons with every indication of a worsening ratio in the future. The desire to exclude dentists therefore, cannot possibly be considered as being pertinent to the Canadian scene.

How then may a more reasonable and justifiable approach be taken keeping in mind the prerogatives of the profession and the attained approval of all the dental schools? We believe a further development of the National Dental Examining Board of Canada could be the means of synthesizing a solution employing these two ingredients.

The N.D.E.B., as constituted, is representative of all ten provinces and therefore through its examinations should function as the servant of the ten licensing boards. If each Canadian graduate were required to possess the certificate of the N.D.E.B. before licensure was possible, then the participating provinces would not find it necessary to treat the applicants for license differently, irrespective of the approved school from which they graduated. That does

not mean, however, we believe it necessary to conduct two separate sets of examinations.

We believe it is quite possible, through suitable arrangements, for final examinations to be developed in all faculties which will serve the requirements of both the faculties and the licensing boards operating through the N.D.E.B. This, of course, would require that the examination, if it were set by the Faculty, be approved by the N.D.E.B. for its purpose. If it were developed by the N.D.E.B. the Faculty should have its rights protected in being able to indicate whether or not the examination dealt fairly with the subject as it was covered in the course.

After the examination has been written it should be marked firstly by the appropriate member or members of the faculty staff and then forwarded to the appointed examiner of the N.D.E.B. Irrespective of the mark obtained from the N.D.E.B. examiner the national certificate must be made contingent upon receiving a passing grade from the faculty.

Undoubtedly such a proposal will present some administrative difficulties but we cannot believe that they are in any way insurmountable. They require, essentially, cooperative understanding among the agencies participating.

Realizing, perhaps, that with the majority, the above views will not find favour we nevertheless are unalterably convinced that our future development will follow at least a somewhat similar pattern. We have come a long way in the last several years. We have, however, a significant journey yet ahead of us.

Christmas—1957

"Why does everything seem so beautifully different at Christmas time? Even among the jostling throngs on the city streets, a soft and kindly spirit is evident. The harshness and selfishness of everyday living is softened and modified by a pervasive spirit of good will."

May this "spirit of good will", to which Norman Vincent Peale refers, fill your hearts at this Christmas season.

All responsible for the production of this Journal join with its editor in wishing each and every one of you a joyful Christmas and a happy and peaceful 1958.

WESLEY J. DUNN

University of Toronto, Faculty of Dentistry

COURSES LEADING TO SPECIALIST CERTIFICATION

Applications will be received up to March 1st for enrolment in postgraduate courses leading to specialist certification in the fields of Dental Oral Surgery and Anaesthesia, Orthodontics, Paedodontics, and Periodontics. Enrolment in each course is limited, and the courses extend over a period of two academic years (Surgery, three years). Applicants must present evidence of satisfactory completion of courses leading to the D.D.S. degree or its equivalent from an acceptable dental school.

For further information and application forms address inquiries to:

The Chairman,
Division of Postgraduate Studies,
Faculty of Dentistry, University of Toronto,
230 College Street, Toronto, Ontario, Canada.

BOOK REVIEWS

Periodontia — 4th Edition. Prepared by: Henry M. Goldman and D. Walter Cohen. Published by: The C. V. Mosby Co., Pages 535—366 Illustrations. Price $12.50.

The text provides the reader with a valuable introduction into the science of periodontology.

The early chapters of the book are devoted to a description of the anatomy, histology, and physiology of the periodontium. Emphasis is placed on the wide range of normalcy in different individuals and under various conditions.

A classification of periodontal disease follows with a description of each respective condition.

Later chapters are devoted to experimental pathology, the aetiology of periodontal disease, and the part that bacteria play in it, to the relative value of radiographs, and to systemic conditions in their relationship to periodontal disease.

A method of examination is discussed with suggestions for charting and compiling the data to form a diagnosis.

In this text-book Dr. Goldman does not deal with periodontal therapy as he has devoted an entire recent publication to it. However, the book contains a great deal of interesting and valuable information for anyone concerned with the study and practice of periodontics.

J. Charlotte Whitney.

Dental Health Education. By Francis A. Stoll, R.D.H., Ed. D. 196 pages $4.50, Lea & Febiger, 1957, and the MacMillan Company of Canada. The Author of this text is the associate professor of Dental Hygiene and Director of Courses for Dental Hygienists, Columbia University.

A search of the literature reveals that it is one of the first volumes published dealing exclusively with the particular field of Dental Health Education. The volume is divided into four parts.

1.) The setting in which dental health education functions.

2.) The methods of dental health education in schools.

3.) The role of instructional materials in dental health education, and,

4.) Adult education for dental health.

There are thirteen chapters in these four sections that give a complete and up to date treatment of the subject. While the material is probably most applicable to current conditions in the United States, it is quite useful for adaption in other countries by those engaged in Dental Public Health activity.

The appendix which is titled, "Opportunities for Patient Education in the Dental Office", is a full but concentrated discussion of this phase of Dental Health education and should be most useful to the dentist, the dental hygienist, and the dental nurse.

R E. Feasby.

THE LIBRARY

A simplified mailing procedure for library books has been instituted. Authorization has been received from postal authorities to mail at special book rates, resulting in a considerable saving to the Association, and eliminating postage costs to borrowers.

Now books are to be returned in their original wrappers, using the return label provided, and leaving the original postage tape intact. The borrower's return address should be omitted. In this way, the borrower is not required to pay postage.

Additions

ARCHER, W. H.: Oral Surgery Directory of the World. 1957. 298 p.

ASTRA PHARMACEUTICALS (CANADA) LTD.: An outline of the chemistry, pharmacology and clinical uses of xylocaine. 1957. 63 p.

GOLDMAN, H. M., and COHEN, D. W.: Periodontia. 4th ed. 1957. 535 p. illus.

PEDIATRIC CLINICS OF NORTH AMERICA: Symposium of the child's mouth. Julius B. Richmond, consulting editor. Nov. 1956. 1137 p. illus.

TRAVIS, L. E. Ed.: Handbook of speech pathology. 1957. 1088 p. illus.

THE ASSOCIATION

Dr. Paul Geoffrion Appointed Dean At Montreal

Announcement has been made that Dr. Paul Geoffrion has been appointed Dean of the Faculty of Dentistry, University of Montreal. Dr. Jean Paul Lussier has been appointed Vice-Dean and Director of Studies. Dr. Geoffrion graduated from University of Montreal in 1922 and has served on the staff for many years, being head of the Orthodontic Department. Dr. Lussier took graduate work at University of California 1952-1954.

Alberta Referenda on Fluoridation

Municipal elections were held in Alberta on October 16th last. Calgary, Edmonton, Red Deer and Medicine Hat had referenda on the introduction of fluoridation into their supplies. Under a provincial law passed over a year ago any municipality introducing fluoridation in that province must do so by means of a referendum, the result of which must give a two-thirds favourable vote.

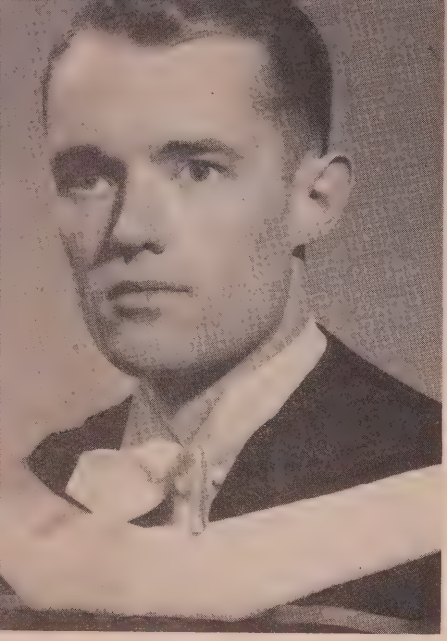
Red Deer approved fluoridation by 1,001 votes to 424. Edmonton fluoridation by law was approved by 30,420 to 16,626, but this made the percentage in favour 64.7% with 66 2/3% required. In Calgary the vote was 26,358 against and 26,158 in favour. At Medicine Hat there were 1,943 for and 1,549 against.

Circumstances surrounding a referendum vote vary from municipality to municipality. The result depends greatly upon educating the public. Splendid educational campaigns were conducted by the dental societies and through their assistance by lay organizations in these municipalities but the result tends to show that to educate the people in a large municipality is a most difficult task. In our opinion a referendum is a poor method of deciding a public health measure. Such action gives the demagogue opportunity to sound off in wild irresponsible statements leaving doubt in people's minds while responsible advocates can do little else than present scientifically proven facts. The responsibility should rest upon the shoulders of those in authority and these individuals should accept such responsibility. Public health measures should not be made political issues.

DR. PAUL GEOFFRION
Dean, Faculty of Dental Surgery, University of Montreal.

Dr. J. W. Neilson Appointed Dean At University of Manitoba

Dr. Neilson was appointed last June as dean of the new dental school to be built at Winnipeg. He graduated from the Faculty of Dentistry, University of Alberta in 1941 and practised in Edmonton for several years, at the same time serving on the staff of the dental school. Then he accepted a position on the staff of the dental school at University of Washington, Seattle, where he has been until the present time. Dr. Neilson took up residence in Winnipeg in November.



KENNETH L. CROFT, B.A.
Deputy-Secretary,
Canadian Dental Association.

Deputy Secretary Appointed

Mr. Kenneth L. Croft has been appointed Deputy Secretary of the Canadian Dental Association. Mr. Croft graduated from the University of Western Ontario with the degree Bachelor of Arts (Journalism) in 1952. Since then he has held a responsible position in the business world. His duties with the Association began on October 15th.

Dr. Charles M. Whitworth New B.C. Representative

Notification has been received that Dr. Charles Whitworth, Vancouver, has been appointed to represent British Columbia on the C.D.A. Board of Governors succeeding Dr. William Miller. Dr. Whitworth graduated from North Pacfic Dental College of Oregon in 1933 and has practised in Vancouver since graduation. He has served his provincial dental organizations in many positions, being President of the College of Dental Surgeons of British Columbia at the present time.

Progress On New Manitoba School

Dean Neilson has issued a statement respecting progress to date, which is reported in the Bulletin of the Manitoba Dental Association.

1. In general, matters are very much in the formative stage.
2. The pre-dental curriculum at the University of Manitoba has been established along the lines set forth by the Council on Dental Education, Canadian Dental Association.
3. Dean Neilson and an architect have visited several dental schools in the United States regarding plans.
4. Construction of the school will commence in the spring of 1958.
5. Plans call for:
   (a) a 46,000 square foot building.
   (b) accommodation of 30 undergraduate students per class.
   (c) a full-time teaching staff of 15 to 18 (7 or 8 of whom will be in the basic sciences)
   (d) adequate part-time teaching staff.
6. Donation of suitable books and journals for the initiation of a library will be appreciated.

Statement By Minister Of National Health

The following statement on fluoridation by the Federal Minister of Health, Mr. Monteith, is reported in the press.

> "The Department of National Health and Welfare is confident that, as the facts become more widely known, fluoridation will come to be recognized as an important landmark in the long quest for control of tooth decay."

1957 Directory

A limited number of the new Directory of the Canadian Dental Association is now available. This biennial publication contains lists of officials and an up-to-date record of names and addresses of every member of the profession in Canada. Copies at $1.00 each, will be supplied on request until the stock is exhausted.

ECONOMIC SECURITY

Your Home : C H M C Financial Services

Prepared by Information Department of Central Mortgage and Housing Corporation through courtesy of W. Stewart Batos, President.

Thinking of building a house? If a mortgage loan is required, it will be worthwhile for you to investigate the home-ownership facilities of Canada's National Housing Act.

This legislation authorizes the Federal government agency, Central Mortgage and Housing Corporation, to insure loans made under the terms of the Act by the chartered banks and other approved lenders.

Building under NHA offers a number of advantages. You get a loan equal to a high proportion of the value of the property at an interest rate of not more than 6% a year, calculated semi-annually. Repayment is made by monthly instalments, usually over a period of 25 to 30 years, which also include one-twelfth of the annual municipal taxes on your home. This arrangement spares you the task of making a heavy tax payment at one time.

The maximum amount of loan obtainable is governed by the type of house you want to build, but let's take for example the home most would-be owners strive for, the detached house on its own lot.

For the detached house the amount of the loan is calculated from the lending value of the house and lot, which is the value of the property for mortgage purposes as determined by CMHC.

The basis of loan calculation is 90% of the first $8,000 of lending value plus 70% on the remainder, up to a maximum of $12,800. You pledge your proposed house and land as security for the loan.

There would be no objection from CMHC if a physician or dentist wanted to incorporate an office and a waiting room in the house. Generally, however, only the actual living accommodation would be considered in establishing the lending value of the property.

Your first step in arranging an NHA loan is to approach an approved lender for a preliminary discussion of the project. For this purpose you should have in mind a particular lot and house design and an estimate of the full cost involved.

At this point, however, it isn't necessary to own the lot. In fact, it's recommended that you don't commit yourself until you have discussed your proposal with the lender. However, you must be in a position to buy the lot if your application is approved.

If your proposal seems satisfactory to the lender you will be asked to make a formal application for loan which will require complete details of the lot on which you propose to build, three copies of the plans and specifications of the house, a breakdown of the overall cost, and proposed financing arrangements. An application fee of $35.00 is charged.

The application is forwarded by the approved lender to CMHC, which in turn informs the lender of the amount of loan it is prepared to insure. Once you get the go-ahead from the lender the building phase begins, and you must start construction within 90 days.

The loan is advanced to you in stages during construction—you're entitled to at least four with the lender retaining sufficient funds at all times to ensure reasonable completion of the building. It is normal mortgage procedure in Canada for the lender to require that your equity be put into the property before advances are made. This equity must be at least 10 per cent of the lending value of the property and may be in the form of cash, or a combination of cash, land and labor.

During construction CMHC will inspect your property to ensure that the Corporation's building standards are being followed. These inspections afford you some measure of protection, but they are not full architectural inspections. For instance, your house might be satisfactory to CMHC for mortgage insurance purposes, but not acceptable to you in that the contractor is not fulfilling the terms of the contract.

A legal agreement with your contractor setting out details of price, specifications, method of settlement for incomplete and unsatisfactory work and so on, should be arranged. CMHC also recommends that you obtain the opinion of an independent expert regarding the quality of construction.

Repayments on the loan are easily calculated. For every $1,000 of loan you'll pay approximately $6.40 a month in principal and interest over 25 years or $5.95 a month for every $1,000 over 30 years, if the interest rate is 6%. The loan insurance provided by CMHC protects the investment of the lender but the fee is payable by the borrower and is set as a percentage of the loan. If you require progress advances during construction the fee is two per cent of the loan amount but where the full loan is to be advanced on completion of the house, the fee is 1¾ per cent. The insurance fee does not require a cash outlay, however, as it is added to the amount of the loan and becomes part of the total mortgage debt.

The mortgage includes a clause giving you the right to pay the balance owing on the loan, or any part of it, on any payment date after the third year. You can also make a pre-payment equal to 10% of the original loan on the 12th and 24th instalment dates. However, the lender has the right to ask for a three months' interest bonus on all such prepayments. The lender may waive the payment of bonus of interest and accept additional payments in excess of those provided for in the mortgage.

There is another way of getting a house under the NHA as the Act provides for home-ownership loans to builders constructing houses for sale. The builder pledges the proposed house and land as security for the loan and when you purchase the home, you assume the existing mortgage.

This might be an attractive financial arrangement if you have a minimum amount of cash to invest, for in this case the builder assumes the normal risks of construction and when he offers the house for sale you can determine the exact amount of cash needed to complete the purchase.

Terms and conditions of repayment are the same as if you were building your own house, but the down payment must be at least 10% of the purchase price.

CMHC branch offices throughout Canada can provide a list of approved lenders and they have several publications dealing with building a house. You'll find them most helpful.

Attention is directed to the recent release by the Government of $150,000,000 for mortgage lending through CMHC. This should result in a considerably greater amount of building funds being available notwithstanding general credit restrictions.

E.L.R.W.

THE CORPS

Brigadier E. M. Wansbrough, O.B.E., M.M., E.D., C.D., Q.H.D.S. was unanimously re-elected as President of the Armed Forces Dental Services Commission by the General Assembly of The Federation Dentaire Internationale.

A conference of senior officers of the Royal Canadian Dental Corps Regular and Militia was held at Army Headquarters in October. Militia officers attending were:

Colonel J. F. Edgecombe, O.B.E., E.D. — Saint John, N.B.; Colonel D. W. Henry, C.D. — Montreal, P.Q.; Colonel H. R. McLaren, C.D. — Ottawa, Ont.; Colonel J. P. Whyte, E.D. — Swift Current, Sask.; Colonel C. S. Lea, M.B.E. — Calgary, Alta.

On Wednesday, 30th Ocober, all officers attending the Conference proceeded to Camp Borden by R.C.A.F. aircraft and inspected the R.C.D.C. School.

Suitable facilities for the display of small items of historical interest are available in the new Royal Canadian Dental Corps School at Camp Borden. Anyone wishing to donate outright or on a permanent loan basis suitable items, are requested to write the Director General of Dental Services enclosing a brief description of the item offered.

Major H. W. Hart, C.D., instructor in prosthetics at the Royal Canadian Dental Corps School addressed the American Denture Society at the A.D.A. Meeting in Miami. Major Hart spoke on "Oral Rehabilitation in Canada's Armed Forces".

The following promotions have been announced by Army Headquarters:

Major G. C. Evans, C.D. to Lt.-Col. — 16 Sept. 57

Capt. T. D. Cobb, E.M. to Major — 1 Sept. '57

Capt. E. M. C. Franklin, D.F.C. to Major — 1 Sept. '57.

Lt.-Col. Evans was born on January 21, 1919 at Bow Island, Alta. He attended the University of Alberta, graduating in 1944. On graduation he enlisted in the C.D.C. and served until his release July 11, 1946. He re-enrolled on August 20, 1947 and since that time has served in various commands throughout Canada and in Korea. At the present Lt.-Col. Evans is holding the appointment of Chief Instructor at the R.C.D.C. School, Camp Borden. Lt.-Col. Evans is married with four children.

Major Franklin was born January 22, 1920 at Digby, N.S. His early education was received in Digby. He attended Acadia University receiving his BSc. in 1940. He enlisted in the R.C.A.F. 2nd October, 1940 as an AC2. He was commissioned as a Pilot in July 42. After a short period of duty in Canada he proceeded overseas and completed two tours of operational flights out of the U.K. He was awarded the D.F.C. On retirement in 1945 he held the rank of F/L. After retirement he enrolled at Dalhousie University in the Faculty of Dentistry in 1947, receiving his D.D.S. in 1952. On graduation he was posted to 12 Dental Coy. R.C.D.C. and is stationed at H.Q. N.B. Area, Fredericton, N.B. Major Franklin is married with one child.

Major Cobb was born in Hamilton, Ont. on January 16, 1922. As a youth he moved to Charlottetown and received his early education there. He enlisted Sept. 2, 1939 as a Pte. with Royal Canadian Signals and proceeded overseas in 1941. He returned in 1942 and was subsequently promoted Lieutenant. He returned overseas serving in U.K., N.W. Europe before returning to Canada. After his release from the Cdn. Army he enrolled in the Faculty of Dentistry, Dalhousie University and received his D.D.S. in 1950. Major Cobb served in Eastern Command from 1952 to 1956. He is now in Germany with the Field Dental Unit. He is married with two children.

The following officers were released:

Captain E. J. Hyde

Captain R. V. S. Muscat

Capt. Richard Victor Seymour Muscat was born in Southall, England 7th April 1929. He received his L.D.S. from the University of London. He served with the British Army from July 1952 to July 1954. He enrolled in the Cdn. Army (Regular) at London, Eng. on 8th Sept. 1955. On arrival in Canada he enrolled at the University of Toronto under the Cdn. Army subsidization plan graduating with his D.D.S. in 1956. On graduation he was posted to No. 13 Dental Coy. Central Command and was employed at 7 P.D. London, Ont. He was released on July 28, 1957. Capt. Muscat is single.

Capt. Edward Joseph Hyde, C.D., was born in Montreal, P.Q. on 15th Dec. 1921. He attended McGill University, graduating in dentistry in 1945. Immediately following graduation he enlisted in the Cdn. Army and has served continuously. He has served for the most part in Western Command, except for a period in Quebec in 1950-51. His release was effective on November 5, 1957. He is married with three children.

THE PROVINCES

ALBERTA

Calgary and District Dental Society

The opening meeting of the 1957-58 season was held on Monday, October 7th. A.D. Sparrow, D.D.S., M.Sc. spoke to the society on "Tissue Healing and Repair". Dr. Sparrow has recently completed a three year course in Oral Surgery and his address was well received by an enthusiastic audience.

The various committees of the Calgary Society have been appointed and reports were given by several chairmen.

The most active committee and one that has provoked a great deal of interest in Calgary was the committee on preventive dentistry. The chairman, Dr. Lorne K. Brooks, is to be highly commended for his untiring efforts to educate the citizens of Calgary as to the merits of fluoridation.

Perhaps a brief history of the political aspect of the fluoridation situation would be pertinent.

The legislature in Alberta has made it mandatory that a plebiscite be instituted by each community before fluoridation can be commenced and in order to be successful, the plebiscite must pass by a 66 2/3% majority of votes cast.

On June 5th, 1957 the Calgary City Council held a public hearing on fluoridation with definite terms of reference as to the methods of conducting this meeting.

Briefs were presented by those opposed and those in favour. Only persons with scientific training were allowed to speak.

The anti-fluoridationists included a petroleum engineer and the Medical Health Officer of Calgary, Dr. W. H. Hill.

Briefs favouring fluoridation were presented by an engineer, a chemist, a physician, and two dentists, Dr. J. A. Duncan, Director of Dental Services of the Calgary Public Health Department and Dr. Lorne K. Brooks, Chairman of the Committee.

A cross examination was then undertaken by both sides. As a result of this meeting, the Calgary City Council decided by a vote of 11 to 1 to present a plebiscite to the electorate at the time of the civic election, October 16th, 1957.

In the interim between the June hearing and the election, much work was done by our committee and the anti-fluoridationists. Herewith is an outline of the efforts of the "anti's".

A Pure Water Association was formed and solicited financial aid and membership. Dr. Exner of Seattle was brought to Calgary and spoke at a public meeting. A weekly suburban newspaper, the North Hill News was vociferous in opposition, presenting weekly headlines labeling fluoridation as poisonous, a communistic plot, mass medication, and the usurpation of all democratic rights. Dr. Hill was quite active in the anti-fluoridation campaign. Incidentally, the only scientific references used by Dr. Hill in presenting his brief to Council were very effectively refuted by Dr. Brooks in his cross examination. The Pure Water Association, headed by a chiropractor became very active towards the end of the campaign making full use of radio, television, and the public speaking platform. It may be well to state here that on radio and television panels where the chiropractors appeared, effective and full use of the word "Doctor" was utilized in a poorly camouflaged attempt to beguile the public into thinking they were listening to medical opinions.

The local Medical and Dental Societies, both daily newspapers, the Junior Chamber of Commerce, the Junior League (ladies), the Chemical Institute of Canada, the Engineering Institute and several other interested organizations spoke very much in favour of fluoridation.

The publicity campaign carried on by both daily papers was of considerable magnitude, both editors doing their utmost to help make the fluoridation plebiscite pass by its required 2/3 majority. Time and space does not permit adequate mention of the efforts put forth by the proponents of the plebiscite. Suffice to say that little more could be expected of individuals who were expending their own time and effort to the cause of public health.

The plebiscite was defeated, 26,158 votes being cast for the measure and 26,358 votes against.

Analysis of the voting by examining the polls is interesting. Nearly all the newer districts, populated by young parents with children, voted strongly in favour, while the older districts wherein live many elderly people and the low income districts wherein live the labouring population, voted heavily

against the measure. The influence of the anti-fluoridation newspaper, the North Hill News, was evident in the voting.

However, it is expected that in the future, as more places adopt fluoridation, Calgary will also—but it has been delayed by a few very loud voices that played on fear, one of the strongest of all human emotions.

In conclusion we may state that in public relations, the Dental profession gained much in the eyes of the people and this was due mainly to the work of Dr. Brooks and his committee.

W. A. N.

Faculty of Dentistry, U of A

Registration in the Faculty of Dentistry, University of Alberta began on September 3, 1957 for the 1957-58 year. Total registration for the four years is 111 students.

A number of new academic staff members accepted positions on the faculty this year:

Dr. Neil Basaraba — who was born at Smoky Lake, Alberta. Neil received his university education at the University of Alberta, graduating with his degree of D.D.S. in 1955.

Dr. Jan Diepenheim — who was born in Djakarta, Indonesia. He received his diploma at the University of Utrecht and his degree of D.D.S. at the Universiy of Alberta in 1956.

Dr. Gordon Geldhart — who was born in Canmore, Alberta. Gordon spent two years as a pharmaceutical apprentice before attending the University of Alberta. He graduated with his degree of D.D.S. in 1952.

Dr. Ronald P. Mullen — who was born in Regina, Saskatchewan. He received his B.A. (Biology and Chemistry) at the Universiy of Saskatchewan in 1949, his degree of D.D.S. at the University of Alberta in 1953, and his degree of M.S.D. from Northwestern University in Orthodontics in 1957.

Dr. Douglas MacDougall — who was born in Central Butte, Alberta. Doug received his degree of D.D.S. from the University of Toronto in 1941. He received post-graduate training with the Canadian Dental Corps School in operative dentistry at Utrecht, Holland.

Dr. W. I. Maurice Steen — who was born in Kenville, Manitoba. He received his degree of D.D.S. at the University of Alberta, graduating in 1950.

Dr. Robert W. Turner — who was born in Edmonton, Alberta. He received his degree of B.Sc. at the University of Alberta in 1949, and also the degree of D.D.S. in 1953.

Dr. Robert Tegart — who was born in Regina, Saskatchewan. He attended Regina College for one year before attending the University of Alberta where he received his degree of D.D.S. in 1956.

Dr. Albert R. Urschel — who was born in Grenfell, Saskatchewan. He studied arts and science for two years at the University of Saskatchewan before attending the University of Alberta where he obtained his degree of D.D.S. in 1948.

R.C.S.

BRITISH COLUMBIA

Interior Dental Society

Good weather and good fellowship prevailed when the semi-annual convention was held in Vernon on Saturday, October 26 at Orchardleigh Lodge overlooking Kalamalka Lake, a beautiful setting for any gathering.

Approximately twenty-five of the fraternity attended, and commencing at 10 o'clock two local physicians opened the first session. Dr. M. Lattey, the anaesthetist, spoke on the psychological approach to patients in general, and their preparation for anaesthetics, local and general. Dr. Hamilton, a newcomer to Vernon, spoke about antibiotics, their use and application.

Dr. Keith Lindsay, oral surgeon from Vancouver, took over the afternoon session, and gave a fine talk on cysts, their diagnosis and removal, with slides to illustrate.

Later after dinner Dr. Coursier, the Interior representative on the B.C.D.A. executive, gave a short resumé of the association's activities for the year.

Meetings and officials rotate yearly between Kamloops, Vernon, Kelowna and Penticton. The past year Dr. Ben Bishop was president and Dr. J. E. Eby was secretary. Next year with meetings to be held in Kelowna, the officers are Dr. K. E. Geis, president; Dr. R. B. Emslie, secretary; Dr. W. A. McIver of Penticton, vice-president; and Dr. D. C. Hicks of Kamloops, a member of the executive.

The Interior dental assistants meet at the same time, and attend the sessions if the clinics are suitable. This time they held a separate meeting in the Health Unit Building, and it was well attended with about twelve present. Mrs. D. Lockerby is their president and Miss Win Warren of the Dental Health Department is secretary. Mr. Les McLean of the Credit Bureau gave a splendid talk on collections and the functions of a nurse in this important department. The Okanagan Telephone Company supplied a movie illustrating the proper approach to telephone conversations, and Dr. Lindsay gave an excellent outline of the

duties of an assistant, and made them feel they were a part of good dentistry in the office.

Vancouver and District Dental Society

An attendance of 150 greeted Dr. Kenneth Easlick, Head of the Department of Paedodontics at the University of Michigan, who lectured in the Banquet Room of the Hotel Vancouver at the November meeting.

The afternoon subject was "A Specialized Approach to the Radiological Examination of the Young Dental Patient". In the evening the illustrated lecture dealt with the detection and treatment of dental anomalies which are found in a practice for children. It was an interesting exposition of unusual cases which would baffle the average practitioner if they presented in his office.

Dr. D. B. McDonald introduced the speaker to the evening gathering, and at the conclusion of the day words of appreciation were given by Dr. C. R. Braaten who formerly studied under Dr. Easlick.

At present there are eleven study clubs in the society with a membership of 137 persons. These groups are active in the fields of prosthodontics, oral diagnosis, gold foil technique, orthodontics, endodontics, paedodontics and periodontics.

The Periodontics Study Club reports that Dr. Wilfred Gallagher, formerly of Vancouver, has accepted the position of mentor of the club. Dr. Gallagher has been professor of periodontics at the University of North Carolina, and is now associated with the School of Dentistry, University of Washington. Activities were previously directed by Dr. J. W. Neilson of the University of Washington, who has been appointed Dean of Manitoba's Dental School.

D. H. M.

MANITOBA

The Winnipeg Dental Society

The Winnipeg Dental Society got the 1957-58 Clinical season off to a good start on October 21st, with a programme featuring Dr. T. H. Shipmon from the University of Tennessee.

Dr. Shipmon spoke on "Complete Denture Prosthodontia" with special emphasis on the following:

(a) Lower impression technique.

(b) Vertical and Centric relationship.

(c) Practical immediate denture insertion technique.

(d) Factors in denture failures.

He showed a great enthusiasm for his subject and offered a tremendous amount of material for a one day meeting. However, the Society members appreciated his endeavours and stayed long past the usual break-up time in order to hear the complete presentation. It is to be hoped that some of Dr. Shipmon's enthusiasm will have rubbed off on the members, as it may help to overcome the apathy toward complete dentures which seems to be increasing as the illegal laboratory situation gets worse.

Dr. Shipmon was given a full course of Western hospitality during his short stay. He was taken direct from the plane out into the marshes and got a first-hand view of the wonderful duck shooting that exists around here. Then, to make sure he was impressed, an ideal sunny day was arranged for the following day, and eighteen holes of golf were enjoyed amongst the leaves. Following the full-day clinic on Monday, he attended the Winnipeg-Regina Football game that night, so he should have a few stories to take back to Memphis about Winnipeg.

An excellent turnout of men for the luncheon and business meeting of the Society greatly encouraged the members of the executive. It is to be hoped that this will continue throughout the year, as it greatly facilitates the handling of Society affairs when there is a representative expression of opinions.

Clear Lake Report

The Annual Meeting of the Western Manitoba Dental Association was held at Clear Lake Chalet on the week-end of September 7th. The odd sprinkling of rain did not dampen the enthusiasm of the golfers, and meals were excellent.

Those present included the following — Portage La Prairie: Dr. F. W. Parrot and Dr. H. H. Smith. Dauphin: Dr. C. S. Robertson and Dr. V. L. Watson. Neepawa: Dr. D. G. Dawson and Dr. J. Y. Pierce. Minnedosa: Dr. L. A. McLean. Swan River: Dr. L. F. Matthews. Boisevain: Dr. E. N. Cole. Brandon: Dr. A. R. Graham, Dr. A. R. Hurst, Dr. D. K. Hurst, Dr. J. E. Purdie, Dr. R. R. Jones.

Guests from Winnipeg were Dr. W. Grenkow, Dr. B. L. Toombs, Dr. C. H. Moore, Dr. P. M. Jackin, Dr. Orr Brown, Dr. T. J. Cooke, Dr. K. N. Routley and Messrs. Len McDougall, J. Tevendale, Alec Tevendale, W. Baluke, Fred Scardina, Harry McKay, Ken Chadwell, Frank McKinnon, Fred Dodds.

Prizes were awarded as follows:

Ash Temple Cup — Dr. R. R. Jones, Brandon; Denco Prize — Dr. D. G. Dawson, Neepawa; Shaw Laboratory Prize — Dr. J. Y. Pierce, Neepawa; Harry McKay Prize — Dr. W. Grenkow, Winnipeg.

J. P. B.

Golf Committee Report

The weatherman co-operated fully and helped the golf committee have five of the best golfing days it has been our good fortune to have in the past few years. The direct result of this was better scores, and there were no less than six golfers in line for the society championship. Dr. Bert Oja won the Ash Temple trophy representing the title for the 1957 season, and our heartiest congratulations go to him on behalf of the Society. The Denco Rose Bowl for the runner-up was won by Dr. Frank Jones. Dr. Peter Jackin was the winner of the Clean Towel Supply trophy for the most improved golfer of the year.

The wind-up dinner at Glendale Country Club was well attended; in fact, attendance was very good, and when we are able to get as many as 50 golfers out, the committee feels that all the effort put into the programme was worth while. Grateful acknowledgement is made to Denco, Central Dental Supply, Winnipeg Dental Supply and Shaw Laboratory for additional prize donations. Personal thanks to Dick Bird and Walker Shortill for their assistance in making this season the success that it was.

M. W.

Winnipeg Chapter Alpha Omega

The Winnipeg Alumni Chapter of Alpha Omega Fraternity was host to Winnipeg Dental Society on November 4th, when the chapter presented an all day clinic at the Glendale Country Club.

The guest speaker was Dr. J. J. Hartsook, Associate Professor of Children's Dentistry at the University of Michigan Dental School.

Dr. Hartsook's delivery in the morning session dealt with cavity medication and the management of vital cariously exposed deciduous and young permanent teeth.

The afternoon portion of the clinic started off with a discussion of various classes of fractures in permanent anterior teeth and treatment of the same. This was followed by a study of methods of stabilization of accidentally loosened anterior teeth.

Dr. Hartsook continued with cavity preparation of deciduous teeth, matrices for replacement of restorations, and the application of newer concepts in this high speed era.

The all important subject of child management was discussed, and the audience was left with the impression that it was not overly difficult to master many and varied situations.

Dr. C. Malkin, President of Alpha Omega Alumni Chapter, thanked the guest speaker, and plaudets were also extended to Dr. N. Winograd, the clinic chairman who so ably planned this day.

Dr. Hartsook's conservative approach and very practical modus operandi backed by years of research in his chosen field, offered those privileged to hear him a genuinely profitable day.

L. H. K.

NOVA SCOTIA

Dalhousie University

Through the courtesy of the Surgeon General, Miss Elizabeth M. Warner, Dental Hygiene Consultant to the United States Department of Health, Education and Welfare in Washingon, visited Dalhousie University from September 29th to October 5th. The purpose of Miss Warner's visit was to survey the University's resources for the teaching of dental hygienists. As yet the University has not given full consideration to the establishment of such a programme, nor could this course be established in less than two years' time. It would appear from Miss Warner's study, that the physical facilities and equipment in the new dental building at Dalhousie would be adequate for the purpose. With the introduction of a very few basic courses, the major problem to be met by the University would be to obtain staff and financial support for the course.

Halifax County Dental Society

The Halifax County Dental Society opened its Fall and Winter Meetings at the Nova Scotian Hotel, under the Chairmanship of the new President, Dr. Carl Dexter.

Miss Elizabeth Warner addressed the meeting on the role and duties of the dental hygienist.

H. M. E.

ONTARIO

Niagara Peninsula Dental Association

The second regular meeting of the Niagara Peninsula Dental Association was held at the Barclay Hotel in Welland on Friday, November 8th. The speaker was Dr. George Hare, Toronto, and his subject, "Emergency Endodontic Treatment for Children." Dr. Hare's presentation was of great practical value and was followed by a Question-Answer period.

A. J.

DR. FRANK MARTIN

C.D.A. Publications Committee Chairman Honoured

Dr. Frank Martin became the recipient of the Toronto Academy of Dentistry's sparingly awarded Honorary Membership at the organization's opening meeting recently. Dr. Martin was presented for this honour by a former C.D.A. president, Dr. P. G. Anderson, professor of operative dentistry, Faculty of Dentistry, Toronto. The following is the text of Dr. Anderson's remarks:

"I have the honour to present for honorary membership in the Toronto Academy of Dentistry the name of Dr. Frank Martin.

This presentation would not be submitted were it not recognized in professional archives, that dentistry has benefitted well by virtue of the contributions that have been made through a willing spirit and a worthy emissary.

Time, energy and enthusiasm, and a desire to elevate the values by which idealisms may find their proper levels in the schemes of professional procedures, have all been factors typical of our candidate tonight, and these, along with so many other attributes, have come to the attention of those who wish to do honour to whom honour is due.

Dr. Martin was born in Dublin, Ireland, the date of which I shall leave to him — to reveal to you — but may I observe from the records that when the family seat was removed from the land of Irish shillelaghs, long courtships and Guinnesses' stout, to the less anti-British and surely more harmonious environment in the new land across the sea, — there was perhaps an unconscious desire to reward Canada, —the benefactor, with a wise and worthy citizen. In Frank, this reward has been the good fortune of our profession.

Our honoured guest graduated from the Royal College of Dental Surgeons of Ontario with the well known "whizz bang" class of 1923. A short biographical sketch has appeared in the year book of our Academy and upon which I shall not enlarge, but again may I observe that with the heritage of the old land, the early years in World War I, and the rehabilitation that brought with it a professional readjustment, was only the "testing ground" for the greater events to come.

In addition to conducting an exceptionally active practice, he has, since 1936, been a teacher — one of those natural ones to whom everyone likes to listen. To be original, to be an artist in your work, to be a teacher and finally to be an administrator, is a large assignment to wrap up in one individual, but when one has served as president of the Academy of Dentistry, president of the Canadian Oral Prophylactic Association, president of the Ontario Dental Association, an elder in his Church, as Registrar and Examiner of the Dental Technicians Association, Director of Medical Arts Building, Chairman of the C.D.A.'s Publications Committee and head of Crown and Bridge instruction at the Faculty of Dentistry, University of Toronto, as well as conduct a "better dentistry for every patient" type of practice, — surely we have a worthy candidate.

With all this broad contribution with its impact on the profession, and the heritage that gave him the strength, the spirit and the drive to make this impact stick, it was only obvious that in time others would honour him as you have done tonight.

Accordingly, in 1948 the International College of Dentists elected him as a Fellow. Rapidly he rose to the post of Registrar for the Canadian Section, then to Councillor of the College at large, which is the international body, and presently he serves as President elect of that organization.

We have all heard of the Emerald Isles in Irish folklore. With our colleague who spent his early life in that environment it seems strangely significant to me tonight, that on this occasion when we are

honouring him, he would be at this time in the Emerald Anniversary year, or 35th year, in the practice of his profession—an era through which dentistry has witnessed probably its greatest period of progress.

Because of the contribution that our patron has made in so many ways in this programme of progress, we are proud and grateful, and I can only think that the observation of Ralph Waldo Emerson in his Oration to the American Scholar,—"Only so much do I know as I have lived" would be a fitting approbation to this man of faithful service.

Mr. President, as one fortunate enough to have been associated for so many years with such a preceptor, I have the honour to present Sir, for honorary membership in the Toronto Academy of Dentistry — Dr. Frank Martin."

Editorial Note: A further honour came to Dr. Martin when he became installed as president of the International College of Dentists at its annual meeting in Miami Beach, Florida, early in November.

Toronto Academy of Dentistry

The preparations for the 1957-1958 Season of the Academy of Dentistry, Toronto, began to manifest themselves on October 21st in the Royal York Hotel during the annual opening dinner. Dr. Robert J. Marshall, the Academy's President, acted as chairman and introduced not only the various members of the Academy Executive and dental representatives, but welcomed as well Dr. Hagar Hetherington, president of the Toronto Academy of Medicine, and Dr. L. A. Pequegnat, Medical Officer of Health for the City of Toronto.

An interesting note was brought to the attention of those assembled when Dr. Marshall informed the group that Dr. Hetherington is a son-in-law of the late Dean Albert Webster.

Three other special guests were Mrs. Harold Skilling, president of the Ladies' Auxiliary, Mrs. June Cook, president of the Toronto Affiliated Chapter of the Ontario Dental Nurses' and Assistants' Association, and Miss Mary Graham, president of the Dental Nurses' Alumnae Association.

Many past-presidents of the Academy were also in attendance and were accorded spontaneous applause.

Dr. P. G. Anderson presented Dr. Frank Martin for a richly deserved Honorary Membership in the Academy, and Dr. Martin made a most appropriate response.

The guest speaker was Mr. W. Harold Rea, president of the Canadian Oil Companies Limited, who by means of coloured slides, shared with the group his October, 1956 trip to Russia. One was impressed by his quotation that there is "no authority on Russia — just varying degrees of ignorance", and one could also not listen to Mr. Rea's most impartial address without regaining a deeper appreciation of our own Canadian way of life.

W. J. D.

The Kingston and District Dental Society

On October 9th the Kingston and District Dental Society held its annual business meeting.

Dr. Harvey Campbell was in the chair to open the session and preside over the election of officers. The results of the election were as follows:

President — Dr. H. Treleaven; Vice-President — Dr. C. F. Sorensen; Secretary — Dr. R. L. Villard; Treasurer — Dr. R. E. Werry; House — Dr. D. E. Hult; Publicity — Dr. R. E. Feasby.

Dr. E. E. Johns presented a report from the Public Relations Committee of the O.D.A. regarding a suggested fee schedule. After discussion the report was approved. There were twenty-one dentists present, including a visitor, Dr. A. E. Fyffe of Napanee.

R. E. F.

London and District Dental Society

The London and District Dental Society held its first meeting of the 1957-58 season, Saturday, October 26th at the Hotel London. The meeting consisted of both an afternoon and evening session. Sixty-five dentists from London and district were in attendance. The scientific part of the programme was conducted by three members of the Society: Dr. J. F. M. Kennedy, Dr. D. C. Stiles and Dr. A. J. Harris. The afternoon session was devoted to a clinical demonstration of surgical procedures using general anaesthesia. The use of sodium pentothal was the highlight of the clinical demonstration.

The afternoon programme was followed at 6:30 p.m. by a dinner and business meeting. Dr. A. J. Harris introduced Dr. W. H. E. Mason, the new president for the 1957-58 season. Dr. Mason conducted the remainder of the meeting and introduced the remaining members of the new executive, Dr. D. E. Whiteman, Vice-President, Dr. D. C. Way, Secretary and Dr. A. V. Scrutton, Treasurer. Dr. Murray Campbell of Chat-

ham was thanked for his past services as representative from the district on the board of the R.C.D.S.

The business meeting was followed by the evening portion of the scientific programme which was presented by Dr. D. C. Stiles and Dr. A. J. Harris. Dr. Stiles led off with a detailed discussion of instrumentation followed by a fine discussion by Dr. Harris which dealt with many of the surgical problems encountered by the general practitioner of dentistry in the everyday conduct of practice. Many colour slides were shown to support the lecture material and to demonstrate the various methods used in the solution of these problems. The clinicians were thanked on behalf of the Society by Dr. J. G. Clark of Tillsonburg.

Peterborough and District Dental Society

The following officers were elected to the Peterborough and District Dental Society for 1957-1958: President, Dr. R. H. Campbell, Lakefield; Vice-President, Dr. Ralph Green, Peterborough; Secretary-Treasurer, Dr. R. M. Nelson, Peterborough.

Brant County Dental Society

Dr. D. Badke has been elected president of the Brant County Dental Society. Other officers elected for the 1957-58 season were: Vice-president, Dr. M. Marling; Secretary-Treasurer, Dr. J. E. Peacock; Councillors, Dr. W. Hart, and Dr. Hugh Smith.

The meeting opened with a discussion of the Red Feather campaign. Pledges and contributions were received by Dr. Badke and Dr. Nikiforuk, representing the dental section of the campaign.

Local dental situations were reviewed and there was discussion of Dental Health Day during Health Week to be held in February.

Afterwards, at a two-hour open clinic, there was a demonstration of the new high-speed dental engines of the air and water turbine types.

Toronto Dentist on "What's My Line?"

Dr. Gundega Kravis, a 1956 graduate of the Faculty of Dentistry and presently practising in Etobicoke Township, was a contestant on the internationally televised show "What's My Line?" on Sunday, November 3rd. Time expired but not before the panel determined that Dr. Kravis was the possessor of a doctorate.

QUEBEC

Montreal Research Project on Cleft Palate

A research project on the causes of cleft lip and palate, to be carried out in the Royal Victoria Hospital, Montreal, is to receive federal assistance to the amount of $8,000. This grant was announced recently by the Minister of National Health and Welfare, Hon. J. Waldo Monteith.

Experimental and clinical studies have indicated that congenital clefts of the palate can arise in different ways. Various genetic and environmental factors may be involved. Research on the subject has for some time been accepted as of considerable importance. The discovery of means for reducing the number of congenitally handicapped children would result in a substantial reduction in beds for hospitalization and the cost of treatment and rehabilitation.

The project, calling for the services of a half-time doctor and the full-time services of a social service worker and a secretary, is expected to be concluded by March, 1959. The research is being directed by Dr. Hamilton Baxter, surgeon-in-charge of the subdepartment of plastic surgery.

Alpha Omega Fraternity — Montreal Alumni Chapter

The first scientific session of the season was held at the Jewish General Hospital on October 8th. The topic was "A Symposium on Evaluation of the Hard and Soft Tissues in Prosthetic Dentistry." Featured were three well known McGill University teachers. Dr. John Gerrie presented an essay on "The Tempero-mandibular Joint." Dr. Robert Harvey spoke on "Periodontal Preparation of the Soft and Hard Tissues," and Dr. Roland T. Lamb presented a "Survey of Fixed and Removable Prostheses."

The 7th Annual Seminar of the Montreal Alumni Chapter of Alpha Omega was held on November 1st, 1957, in the amphitheatre of the Montreal General Hospital. The meeting was open to all dental societies of the district and attracted members of the Montreal Dental Club, the Montreal Endodontia Society, the Societé Dentaire de Montreal, the Mount Royal Dental Society. In addition a number of guests from Toronto, Ottawa and Three Rivers were present.

The clinicians were Dr. Irwin A. Epstein of St. Paul, Minnesota, who presented two essays, entitled the "Role of Endodontics in Mouth Rehabilitation," and "Some Problems of the Unexpected Patient."

Dr. Harold Maxmen of Detroit, Mich., presented a paper on "Pre-periapical Cur-

retage — Canal Filling Indications and Technique," and an essay on "Unpublished Aids in Achieving Successful Root Canal Therapy."

Dr. Bertram Wolfsohn of San Francisco, California, presented an essay on the "Philosophy of Endodontics," and a paper on "Medicated Ointments in Endodontic Practice."

The all-day seminar was terminated with a panel discussion moderated by Dr. H. H. Pearson of Montreal.

A special vote of thanks is due to Dr. James McCutcheon, Dean, Faculty of Dentistry, McGill University, and to Dr. Wilfred Johnson of the Department of Endodontics, McGill University, for their splendid co-operation in effecting ths program.

M. S.

New Dean of U. of M. School of Dentistry

Dr. Paul Geoffrion has been appointed Dean of the Faculty of Dental Surgery of the University of Montreal at a recent meeting of the Board of Governors. Dr. Jean-Paul Lussier, M.Sc., was named assistant-dean and director of studies, and Dr. Albert Suprenant, President of the College of Dental Surgeons of the Province of Quebec, was made a member of the Council of the Faculty.

Dr. Geoffrion paid tribute to former Dean Ernest Charron, who recently resigned for reasons of ill health. He pointed out that Dr. Charron has been responsible for giving to the Faculty very high professional standards by sending many young professors abroad for postgraduate work. Two years ago, under his deanship, the dental clinics and laboratories were completely renovated.

Dr. Geoffrion, who was assistant-dean and is a full professor of orthodontics, and director of that department, studied at College de l'Assomption and he is a graduate of the University of Montreal Dental School. He has specialized in orthodontics at Harvard University and Columbia Dental School. He is a member of several learned societies, both American and European, and a Fellow of the International and the American Colleges of Dentists. He also has a diploma of the American Board of Orthodontics. Dr. Geoffrion has written many articles for periodicals and delivered many papers in national and international meetings of dentists. In 1954, he was a guest lecturer at the Dental School of Paris and at the University of Istanbul.

Dr. Lussier graduated from Collège Grasset and in 1952 from the University of Montreal School of Dentistry. Four years later, he obtained a B.Sc. degree from the Faculty of Science and then a Master of Science degree in physiology from the Faculty of Medicine. He then took postgraduate work for two years at the University of California. Upon his return, he was appointed to the teaching staff of the Faculty of Dental Surgery and he is now associate professor of physiology at the Medical School.

He is a fellow of the American College of Dentists, a member of learned societies, both American and Canadian, and a member of the National Research Council (Committee of Dental Research).

Montreal Dental Club

The thirty-third Annual Fall Clinic of the Montreal Dental Club was held in the Sheraton Mount Royal Hotel on October 23, 24 and 25. As all the many who attended will agree, this year's convention was the usual success it has been in the past.

Registration began at 8:30 on Wednesday and was followed by a series of table clinics from 9:30 to 12:00 noon. Dr. Don Kepron of Montreal discussed and illustrated complete denture impression techniques. Dr. George Perrault of Montreal spoke on space maintainers. Drs. Albert Colle and Walter Swiston of Montreal presented a clinic on orthodontics. Dr. Gerard de Montigny of Montreal dealt with surgical corrections before prosthetics. Drs. Ernie Ambrose, George Dundass, and Harry Rosen of Montreal discussed variations in outline form and cavity preparations and methods of condensing gold foil in class V cavities. Dr. J. D. Stewart of Montreal gave an illustrated clinic on periodontics. Dr. Hyman Israel of Montreal presented roentgenograms of endodontic cases before and after treatment. Dr. D. D. MacDonald of Montreal demonstrated a new matrix for amalgam restorations for prevention of overhangs. Dr. L. MacLachlan of Ottawa talked on duplicating coloured slides in oral photography. Dr. W. O. Mulligan of Saint John, N.B., showed methods of soldering orthodontic bands, and Lt. Col. G. R. Colby, R.C.D.C., of St. Johns, Quebec presented temporary external periodontal splints.

Before the noon luncheon, delegates circulated among the exhibitors' booths where they were brought up to date on new equipment, materials and techniques.

Dr. E. T. Cleveland, President of the Montreal Dental Club, spoke at length to an attentive audience, following the luncheon.

In the afternoon, beginning at 3:00 p.m., four projected clinics were given. Dr. Guy LeFrancois of Montreal gave his ideas on

"How to Prevent Gingival Troubles in Jacket Crowns," showing the causes of gingival irritation, preparation of the shoulder, adaptation of the copper band and temporary crown.

Dr. Roger E. McMahon, of Montreal, spoke on the "Recognition and Control of Dry Sockets," stressing pre-operative and post-operative observations.

Dr. Wallace F. Walford of Montreal assessed the "Causative Factors in Periodontology," including alcoholism, the endocrines and psychiatric factors.

Dr. Howard T. Oliver of Montreal discussed "Interceptive Orthodontics," during which he considered the early removal of the four first bicuspids in the treatment of certain common classifications of malocclusion.

From 7:00 to 8:30 p.m. the Montreal Dental Nurses and Assistants were hostesses at a very successful cocktail party.

Following a 9:00 o'clock visual education session on the "Practice of Radiological Safêty" on Thursday morning, M. Martin Tunis, M.D., C.M., of Montreal, gave a most interesting essay on "Craniofacial Pain," basing his essay on the frequent incidence of craniofacial pain in the absence of manifest orodental pathology. Dr. Tunis stated that pathophysiological processes involving the pain sensitive tissues covering the cranium as well as the extracranial adjacent structures may be associated with pain in many sites, including the temporomandibular region, the maxillary antrum and the mandible. These "refractory" craniofacial pain syndromes he discussed at length, as well as the orientations concerning their management.

Twice daily during the remaining two days, registered clinics were given by six well qualified men on various aspects of dentistry. Herbert D. Coy, D.D.S., of Richmond, Virginia, director of the Dental Clinic at the Medical College of Virginia, gave an interesting clinic on "Better Amalgam Restorations" in which he included all phases of good amalgam restorations.

Frederick A. Hohlt, D.D.S., Assistant Professor of Operative Dentistry at the Indiana University in Indianapolis, spoke on "The Application of the Elastic Impression Materials and the Indirect Inlay Procedures." He discussed the steps, both in the laboratory and at the chair, for taking accurate impressions using various elastic impression materials.

Donald Samuel Moore, D.D.S., of Hamilton, Ontario, Associate, Department of Periodontics at the University of Toronto, lectured on the "Treatment of Periodontal Diseases," in which he stated that successful results depend on a practical approach to the treatment of periodontal diseases.

Richard R. Troxell, B.S., D.D.S., Commander Dental Corps, U.S.N. at Bethesda, Md., discussed "A Hygroscopic Investing and Casting Technique and a Method of Gold Polishing." Phase one of this two-phase presentation was a step by step consideration of the employment of a hygroscopic technique, and phase two, a step by step slide series showing the polishing of a gold crown with macro- and micro-photographs.

Garth C. Evans, D.D.S., Major, R.C.D.C. Camp Borden, Ont., emphasized "The Necessity for and the Factors Involved in Selective Correction in Complete Denture Occlusion." This clinic dealt with the technique of overcoming the occlusal error incorporated at the time of fabrication of the dentures, by explaining the rationale of the laboratory remount and of the patient remount.

Roland T. Lamb, B.Sc., D.D.S., Lecturer, Crown and Bridge Department of McGill University, discussed "Occluso-Rehabilitation." Stating that Occluso-Rehabilitation is merely the conscientious application of good dentistry, Dr. Lamb maintained that it can salvage the debilitated dentition, defer the dreaded complete dentures, and with thoughtful diagnosis and planning, restore many mutilated mouths to better function and appearance without employing very complicated articulators or procedures.

Following the noon luncheon, Mr. David M. Legate, Associate Editor of the Montreal Daily Star, spoke about Journalism, a subject very close to his heart.

The balance of the afternoon was filled by the registered clinics and the exhibits.

The Supper Dance, inaugurated last year, was once again the social highlight of the convention, with more than twice as many couples attending this year. Paul Beauregard and his Orchestra ably supplied dancing music from 10:00 p.m. to 1:00 a.m., and the Buffet Supper if possible, was more appealing and satisfying than the previous.

Friday, the final day of the convention, began at 9:00 a.m. with the showing of a film on the "Fundamentals of Radioactivity," obtained through the courtesy of the Canadian Army Film Library, Quebec Command R.C.D.C., by the efforts of Col. D. W. Henry, R.C.D.C. (Res).

At 10:00 a.m. William James Douglas Cooke, M.D. Medical Officer, Radiation Services, Department of National Health and Welfare, Ottawa, Ont., gave a talk on the "Diagnostic Radiographs with Maximum X-Ray Protection for Patient and Operator."

As an innovation this year, the Graduate Society of McGill University sponsored a reunion for the Dental Alumni from 11:45 a.m. to 12:45 p.m., to which all graduates

and their wives were invited. Many old acquaintances were renewed, and new ones made.

The wives and nurses of many of the dental delegates were present at the final luncheon on Friday, following which all thoroughly enjoyed the cartoon sketches of Gordie Moore as he depicted many aspects of metropolitan life in Montreal.

With the final registered clinics in the afternoon, the Thirty-third Annual Fall Clinic of the Montreal Dental Club drew to a close.

Our heartiest congratulations and appreciation to the General Chairman, Dr. D. B. Ward, and his committees for a most successful convention.

W. D. S.

SASKATCHEWAN

Saskatchewan Dental Association

The officers of the Saskatchewan Dental Association are: President, Dr. Ben Bookhalter; Vice-presidents, Dr. Fred Wihak and Dr. Doug. Parker; Secretary, Dr. Carl Bolen; Treasurer, Dr. Harry Kinzel; Publicity Chairman, Dr. Q. C. Zaparinuk.

The officers arranged for the clinical tour of the province by Dr. R. S. Locke, of Toronto, which was very successful. A further clinician will tour the province this winter and he will be a paedodontist.

It has been announced that the S.D.A. Convention will be in Regina in 1958 and will feature a two day refresher course by J. Ludwig, M.D., M.Sc., D.D.S.

We were all happy to learn of the award to Dr. L. J. D. Fasken of Honorary Life Membership in the Western Canada Dental Society and also the honour bestowed on Dr. Walter Hancock and Dr. A. E. Chegwin in being awarded the F.I.C.D. Sincere congratulations are due these members. This is a deserved recognition for services rendered the profession.

North Eastern Dental Society

The officers of the North Eastern Dental Society are: President, Dr. W. R. Watchler, of Yorkton; Vice-president, Dr. A. Gelmon, of Melville, and Secretary-Treasurer, Dr. H. Large, of Yorkton.

This Society had visitors in the persons of the President and Secretary of the S.D.A., Dr. Bookhalter and Dr. Bolen respectively.

L.D.H.

CORRESPONDENCE

The Airotor

To the Editor,

As general practitioners, we spend much time cutting sound enamel and dentine to acquire extension for prevention and retention. By cutting this tooth tissue easily, the airotor reduces the time and effort required for cavity outline form. Because it cuts without the unpleasant grinding sound felt and heard by the patient, the latter will assure you that the new drill cuts quietly despite its whine.

Because it is difficult to feel soft tooth tissue with the airotor, I continue to remove carious dentine with spoon excavators and the round bur in the slower contra-angle. Chisels, of course, are still essential for the removal of unsupported enamel.

The airotor is also desirable for cutting grooves for bridge preparations; entering the pulp chamber of the very sensitive tooth; and dividing the crown of a molar that requires sectioning for removal.

The foot switch of the airotor is too small and too sensitive, I believe, to operate with the foot. I, therefore, have the patient hold the switch in both hands and operate it with his thumbs like a small see-saw. The end beside the cord is labelled AIR, the other end, WATER. Squeezing either end puts the drill into full speed. The "air" squeeze provides an air spray, the "water" squeeze adds a water spray. Children work the switch easily. I rehearse the patient with these words of command: "air! water! stop!", and the patient responds accordingly. He feels good about participating in the operation of this quiet-cutting drill that he can stop at will.

The soft plastic bur chuck of the airotor is ap-

pealing. It acts, I feel, as a shock-absorber—like the rubber mount that cushions the car engine.

After each patient, the handpiece is detached, soaped up, rinsed and sterilized in Zephiran Chloride, aqueous solution. It may also be boiled or autoclaved. It is self-lubricating.

In my opinion, the airotor will lighten your daily burden and impress your patients favourably.

Lionel Metrick, D.D.S.,
208 Medical-Dental Building,
150 Metcalfe St., Ottawa 4.

Cleft Palate and/or Lip

To the Editor,

Sir,—I have read, with great pleasure and profit, the articles by Cox, Curtis, Lewis, Lindsay, Spence and Whaley on the above-mentioned subject, published in the October issue of the Journal of the Canadian Dental Association.

While congratulating these writers on their masterly expositions, may I have the temerity to suggest that the inclusion of an article on the historical background of these disorders might readily have proved of additional interest to your readers!

For instance, to cite but a few authorities of bygone days, these must include: A. Paré (1579), R. J. Garengeot (1715), P. Fauchard (1728), R. Wiseman (1734), L. Heister (1739), N. D. de Chémant (1797), C. F. von Graefe (1816), J. Snell (1824), P. J. Roux (1825), N. W. Kingsley (1860) and T. W. Brophy (1886).

Although an adequate bibliography in all cases proves very helpful, nevertheless history *does* remind us of our heritage.

I am, Yours etc.

J. Menzies Campbell, D.D.S., F.D.S., F.R.S.E.,
70 Great George Street,
Glasgow, W. 2, Scotland.

GENERAL NEWS

Hospital Dentistry

The development of hospital dental services in smaller hospitals was emphasized at the Institute-Workshop on Hospital Dentistry, June 17-19, as a twofold opportunity for bringing about an improved health service to the public. The two promising aspects were described as (1) the opportunity for state and local dental societies to expand the capacity of dental practice to meet the increased demand for dental care and (2) the opportunity for hospitals to help meet their community responsibilities by providing a total health service.

The institute workshop was conducted by the American Hospital Association in cooperation with the American Dental Association and co-sponsored by the American Medical Association. All sessions of the three-day meeting were held at the Willard Hotel, Washington, D.C. Institute coordinators were Sarah H. Hardwicke, M.D., Secretary, A.H.A. Council on Professional Practice; John Hinman, M.D., assistant secretary, A.M.A. Council on Medical Education and Hospitals, and Gerard J. Casey, D.D.S., Secretary, A.D.A. Council on Hospital Dental Services all of Chicago.

Extensive information on the administrative problems in a hospital was provided. It was noted that only 34 per cent of the hospitals in the United States have any formal dental service, and they are mostly the larger institutions. As far as dentists are concerned, the most significant problem was seen as a lack of understanding on the part of other members of the health team as to what the dentists can deliver in the interest of the total health of the patient. The participants agreed that there is a distinct need for more effective communication between dentists and other members of the health team.

Fluoridation

Fluoridation programs, as of Sept. 4, were in operation in 1,532 communities with populations totaling 32,319,603 people, according to the U.S. Public Health Service. Among newcomers to the program is Topeka, Kans., the state capital, where the procedure started August 20. It is the 27th community in the state to have the program.

IN MEMORIAM

Maxwell Norman Rockman — Dr. Maxwell Norman Rockman died suddenly at Huntsville, Ontario, on October 21, 1957. He was 46.

Born in Toronto, he received his early education at Harbord Collegiate Institute, Toronto, and graduated from the University of Toronto, Faculty of Dentistry in 1936. He also attended a graduate course in Radiography — B.Sc. (Dent.)

In 1942 he joined the R.C.D.C. and served 4½ years. After the war he returned to his practice and in 1949 became attached to the Radiodontic Dept. at the Faculty of Dentistry. He became head of the Radiodontic Department in 1956. He delivered many extra-mural lectures and conducted the post-graduate courses in Dental Radiography at the Faculty. He was a charter member of the Toronto Radiodontia Study Club, and a member of the executive committee for the 9 years of its existence, having been president for 2 years. Dr. Rockman was an outstanding amateur photographer and won several awards.

He was an active member of the Hat and Rabbit Club, and was himself a conjurer. He was a member of the B'nai B'rith; Secretary of Alpha Omega Fraternity, 1957; President of Sons of David Mutual Benefit Society; member of the Academy of Dentistry, Ontario Dental Association, and Mt. Sinai Dental Society. He was also on the editorial board of Oral Health Magazine, and had contributed many articles on Dental Radiography. He had been active for 5 years on the Convention Committees of the C.D.A. and O.D.A. Dr. Rockman was also on the clinical staff of the Mt. Sinai Hospital.

Surviving are his wife, Lillian, two sons, Peter and Joseph, a daughter, Laurel; his mother, Mrs. Rose Rockman, a brother, Dr. John Rockman and a sister, Natalie, all of Toronto.

Morris Palansky — Dr. Morris Palansky of Winnipeg, died on October 9th, 1957, in Winnipeg General Hospital at the age of 45.

Dr. Palansky was born in Winnipeg and graduated in 1938 from Minnesota Dental College. He had practised dentistry in Winnipeg since, except for service as a Captain in the army during the Second World War.

He is survived by his widow, Ella; two sons, Earle and David; two brothers, Joe and George; four sisters, Mrs. I. Racklin, Mrs. M. Narvey, Mrs. H. Kalmanson and Mrs. L. Pusitz.

Owen Clarence Watson — Dr. Owen Clarence Watson died in October at the age of 78, following a lengthy illness.

Dr. Watson was born in Dresden, Ontario, and received his early education in London, Ontario. He graduated from the R.C.D.S. in the year 1904. In 1905 he started practising in Campbellford, Ontario, where he remained until his retirement due to ill health, in 1955. Dr. Watson also held Honorary Membership in the R.C.D.S.

He was the last surviving charter member of Ionic Chapter, Royal Archmasons, Campbellford; Past First Principal of the Ionic Chapter (life member of both bodies); Past District Grand Master of A.F. & A.M., Peterborough District.

Surviving are his wife, Ethel, and a son, Maynard, of Fergus.

Wilbur Samuel Watson — Dr. Wilbur Samuel Watson of Vancouver, B.C., passed away on October 19 at the age of 69. He suffered a heart attack and after one week's illness, died in St. Paul's Hospital.

Born in Bruce County, Ontario, he went to Vancouver as a boy, graduated in dentistry at Northwestern University, Chicago, in 1915, and registered the same year in British Columbia.

During his 42 years of practice Dr. Watson was active in dental affairs. He was a member of the Council of the College of Dental Surgeons for several years, and in 1938 was secretary of the Pacific Coast Dental Conference.

A charter member of the West Point Grey Baptist Church, he was Sunday School superintendent for 19 years and was chairman and life member of the Board of Deacons.

Surviving are his wife, Mrs. Kate Evelyn Watson; two daughters, Mrs. Hazel Skelton and Mrs. Grace Pearson of Vancouver; a brother, of Courtenay, B.C.; and six grandchildren.

James Mitchell Abbott — Dr. James Mitchell Abbott of Erin, Ontario, died on October 23, 1957. He was 81 years of age. Dr. Abbott was born in Eramosa Township in 1876.

He graduated from the Royal College of Dental Surgeons in 1905, and became an Honorary Member of the R.C.D.S. in 1955.

Surviving is his wife, Margaret, a son, Jack, of Kenora; a daughter, Jean, of Erin, and one sister.

ANNOUNCEMENTS

Conventions of the Canadian Dental Association

1958	Montreal, Quebec	Oct. 5th—8th
1959	Halifax, Nova Scotia	June 21st—24th
1960	Ottawa, Ontario	September 4th—7th
1961	Saskatoon, Saskatchewan	June 25th—28th
1967	Toronto, Ontario *(Centennial Celebration of Dentistry in Ontario)*	May

FUTURE EVENTS

Date	Function	Location	Officer	Address
Dec. 28, 29, 30, 1957	Alpha Omega Fraternity Golden Jubilee	Lord Baltimore Hotel	Dr. F. A. Stein, National Editor	2117 Springwells, Detroit 9, Michigan.
Jan. 23, Feb. 13, & Mar. 20, 1958	Toronto Academy of Dentistry Stated Meetings.	Osler Hall, Huron St. Toronto.	Dr. J. A. Bigelow Secretary,	2298 Yonge St., Toronto, Ont.
Feb. 21,	Toronto Academy of Dentistry Dinner Dance.	Royal York Hotel, Toronto, Ont.	Dr. J. A. Bigelow, Secretary.	2298 Yonge St., Toronto, Ont.
Feb. 21, 1958	Annual "At Home" Dance	Royal York Hotel, Toronto, Ont.	Mr. Calvin Torneck,	Faculty of Dentistry Dental Students' Society, 230 College St. Toronto 2B, Ont.
May 18-21, 1958	Convention-Ontario Dental Association	Royal York Hotel, Toronto, Ont.	Mrs. R. E. Booker, Sec.,	234 St. George St., Toronto, Ont.
June 22, 1958	Second International Conference on Endodontics	University of Pennsylvania, Philadelphia.	Mrs. M. Kolb, Secretary,	4001 Spruce St., Philadelphia 2, Penna., U.S.A.
Sept. 14, 15, & 16, 1958	E.O.D.A. Convention	Kingston, Ont.	Dr. A. Slone,	101 Rideau Street, Ottawa, Ontario.

SHORT GRADUATE COURSE

University of Toronto, Faculty of Dentistry

Orthodontics—Mar. 10-14, 1958—Enrolment Limit 12. Fee $100—In charge—Dr. D. G. Woodside.

Dental Oral Surgery and Anaesthesia -April 21-25, 1958—Enrolment Limit 12. Fee $100—In charge—Dr. J. H. Johnson.

Please address enquiries to: The Chairman, Division of Postgraduate Studies, Faculty of Dentistry, University of Toronto, 230 College St., Toronto 2B, Ont.

Congrès International de Stomatologie

To mark its Tenth Anniversary, the Société Scientifique de Stomatologie de Belgique is organizing an International Stomatological Congress during the period of the Brussels Universal and International Exhibition 1958.

The Congress will be held from June 11-15, 1958, in the Faculty of Medicine of the University of Brussels, 115 Boulevard de Waterloo. Members desirous of delivering a paper or presenting a clinical case are asked to advise the Secretary before February 1, 1958. All correspondence may be sent to the Secretary, Dr. Serge Damseaux, 14 rue Leopold Procureur, Jette—Bruxelles.

The Sterling-Rock Falls Rehabilitation Center, Inc. (not for profit), a training and treatment foundation for the care of maxillofacial patients, takes pleasure in announcing its programme for 1958.

A five day workshop, January 26-30, 1958, will be offered immediately preceding the Mid-Winter Meeting of the Chicago Dental Society. This course will cover prosthetic restorations of the ear, nose, and parts of the face using both hard and flexible prostheses. Rehabilitation of the handicapped using surgical implants, and intra and extra-oral prostheses, will be covered in lectures, demonstrations, models and visual aids.

An intensive one month course will be offered, August 4-29, 1958. Extensive training will be offered in both the theory and techniques of maxillofacial, surgical, orbital and cleft palate care. Lectures will be augmented by visual aids, demonstrations and practical laboratory instruction.

Additional information may be secured by writing to: Edwin N. Cooper, Executive Director, Sterling-Rock Falls Rehabilitation Center, 303 W. 2nd Street, Rock Falls, Illinois, U.S.A.

Tufts University School of Dental Medicine

Refresher Course: Diagnosis and Management of Occlusal Disharmonies April 7, 8, 9, 1958—Class Limited to 12—Fee $75.00

For Information and application write to: Director of Graduate & Post-graduate Studies, Tufts University School of Dental Medicine, 136 Harrison Avenue, Boston, Mass.

Volume 23
Numéro 12
décembre 1957

Journal
DE L'ASSOCIATION DENTAIRE CANADIENNE

Un cas de prognatisme, avec hypertrophie unilatérale du maxillaire inférieur

par ANDRE CHAREST, D.D.S., Québec, P. Qué.

La correction chirurgicale des anomalies du maxillaire inférieur est une réalisation importante du domaine de la chirurgie buccale; de grands progrès ont été faits et les résultats furent des plus heureux.

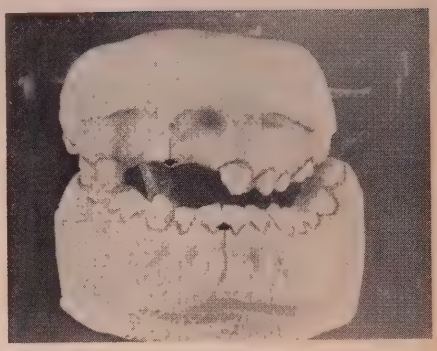
Différentes méthodes ont été mises de l'avant: certains auteurs ont fait valoir l'avantage des interventions faites au niveau de la branche montante; d'autres se sont prononcés en faveur de celles faites au niveau de la branche horizontale, qu'il s'agisse de correction unilatérale ou non.

Mon intention n'est pas de soutenir l'une ou l'autre de ces méthodes, mais plutôt de présenter un cas où il a fallu intervenir *aux deux* endroits mentionnés, afin d'obtenir le meilleur résultat, tant esthétique que fonctionnel.

Cliché No 1

Le Cas: Monsieur X, agé de 19 ans, m'est référé à l'Hôpital de l'Enfant-Jésus, pour douleurs à l'articulation temporo-maxillaire droite, ainsi que pour correction

Cliché No 2



Cliché No 3

chirurgicale d'une anomalie du maxillaire inférieur (clichés I et II).

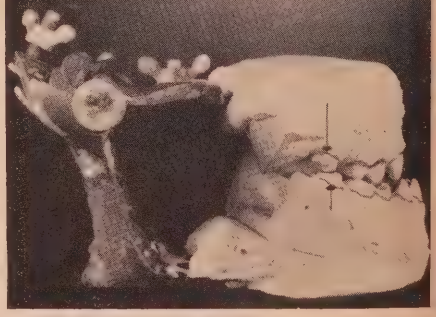
Après un examen médical complet qui n'a rien révélé d'anormal sauf le maxillaire, nous constatons, (clichés III et IV) que le sujet présente un prognatisme d'environ un pouce, en plus d'une déviation du menton vers la gauche (le cliché No I a été interverti) qui laisse entre les lignes médianes du haut et du bas, un écart de même dimension.

Sur les clichés III et IV nous voyons une articulation complètement fausse, sinon inexistante: à droite, la lère molaire inférieure s'articule entre la canine et la lère prémolaire supérieure, et à partir de cette canine jusqu'à la 2ème molaire gauche, il n'y a aucun contact entre les dents du haut et du bas: un espace d'un centimètre les sépare. De plus, l'arcade dentaire inférieure gauche est "cross bite" de 1 cm. par rapport à celle du haut.

Plan de traitement

Afin de donner au maxillaire sa fonction et son aspect esthétique normal, il fut décidé d'opérer à trois endroits: d'abord au niveau de la branche montante droite et, plus tard, au niveau de la branche horizontale droite et gauche, en escomptant les résultats suivants: 1° reculer la mandibule, de façon à mettre les molaires du haut et du bas en occlusion; 2° redresser la mandibule de façon à ce que la ligne médiane du haut cor-

Cliché No 4



Cliché No 5

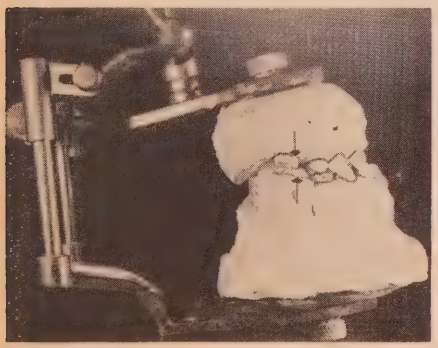
Cliché No 6

Cliché No 7

responde à celle du bas; 3° remettre l'arcade du bas gauche vis-à-vis celle du haut, aligner les deux angles du maxillaire, et redonner au patient un facies convenable.

Les opérations

La 1ère intervention fut pratiquée selon une méthode "semi-ouverte," c'est-à-dire une incision d'environ un pouce en arrière de l'angle du maxillaire, côté droit, parallèlement à la branche montante. Celle-ci fut sectionnée à l'aide d'une scie de Giglie, au dessus du canal dentaire. Après quoi, le corps du maxillaire fut dévié au maximum vers la droite, et une ostéo-synthèse fut faite. Il restait à immobiliser la mâchoire, en utilisant des "cap-splints" mis en bouche avant l'intervention. Les clichés 5 et 6 nous montrent que la déviation du menton a été ainsi corrigée en partie et que l'occlusion des molaires a été rétablie. Ce premier résultat était très encourageant.



Cliché No 8

Un mois plus tard, après avoir extrait la 1ère molaire droite et les deux prémolaires gauches, une deuxième intervention fut faite au niveau de la branche horizontale droite et gauche. La grandeur et la souplesse de l'ouverture de la bouche nous permettait d'opérer par voie intrabuccale seulement.

L'incision fut faite le long de la muqueuse buccale droite, le périoste soulevé et rétracté. Le cortex buccal, vis-à-vis la

Cliché No 9

Cliché No 10

1ère molaire, devait, par la suite, être enlevé à l'aide d'une fraise et d'un ostéotome.

Le tissu spongieux de l'os fut curetté et rongé jusqu'au nerf dentaire qui fut par la suite rétracté. Le cortex inférieur et lingual fut sectionné à l'aide d'une fraise et le tout enlevé en bloc.

Après avoir fait la même chose du côté gauche, au niveau de la 2ème prémolaire, une ostéo-synthèse des deux côtés fut pratiquée, et les plaies fermées. L'immobilisation des maxillaires fut faite et des "locking bars" vissés sur les "cap-splints" des fragments sectionnés.

La convalescence fut de courte durée, et la paresthésie causée par le traumatisme chirurgical disparut après quelques semaines. L'immobilisation totale fut maintenue pendant six semaines, le maxillaire libéré et les "cap-splints" du bas laissés en place pendant deux autres semaines. Il y avait lieu d'être satisfait du résultat, tant au point de vue fonctionnel qu'esthétique (clichés 7 et 8). Cinq mois après l'intervention, les fragments s'étaient maintenus solidement en place, et l'apparence du patient s'était grandement améliorée. (clichés 9 et 10)

Conclusion

Cet exposé avait pour but de démontrer la nécessité, pour ce cas, d'intervenir *aux deux* endroits cités plus haut, soit, au niveau de la branche montante, et au niveau de la branche horizontale, plutôt qu'à l'un ou l'autre de ces endroits.

De plus, le fait que la difformité s'accentuait rapidement depuis les derniers mois, et que la douleur de son condyle droit augmentait proportionnellement, nous laissait soupçonner l'existence d'une dysplasie hypertrophique active de ce centre de croissance. C'est pourquoi, la section de la branche montante a eu, en plus de l'effet correctif, un effet préventif c'est-à-dire, sinon d'arrêter complètement toute autre croissance future, au moins, diminuer considérablement l'évolution de cette hypertrophie qui aurait pu, par la suite, changer les résultats de l'intervention.

L'importance biologique du fluor-ion*

DR HANS JOACHIN SCHMIDT, Stuttgart-Degerloch

Les relations qui existent entre le sol, les plantes, les animaux et les hommes, commencent à être étudiées avec intérêt et persévérance par de nombreuses personnes. Il est évident que le sol ne peut fournir aux plantes et aux animaux que les substances qu'il contient; par conséquent, celles-ci sont communiquées à l'homme par l'intermédiaire des plantes et des animaux. A cela s'ajoute le fait que les plantes, les animaux et les hommes ont besoin des produits du sol. C'est pourquoi, les aliments se composent d'éléments solides et liquides. Si l'on considère les éléments qui constituent les substances nécessaires à la formation de l'organisme, c'est à ces substances que l'on doit la richesse du sol. Encore une fois, seuls les plantes et les animaux peuvent produire, grâce à leur végétation saine, ces abondantes substances précieuses pour l'organisme humain.

Ceci entraîne la question suivante, à savoir si nos sols actuels sont en état de donner toutes ces substances nécessaires et indispensables à la vie des plantes, des animaux et des hommes. On se pose cette question pour affirmer avec certitude "la régulation des procédés organiques". De beaucoup de côtés, on objectera toujours que le sol s'est appauvri en éléments les plus essentiels et en minéraux et que, plus particulièrement, notre exploitation actuelle intensive attache surtout une grande valeur à l'accroissement de la production et ne tient que très peu compte des propriétés des plantes elles-mêmes. Aussi parle-t-on de ce qu'on a pas prouvé sans y attacher grande importance; c'est pour cela également que l'on ne fait pas attention à ces recherches de grande envergure qui pourraient montrer sans contredit qu'un engrais n'a aucune influence sur le sang, le poids du corps, etc. . . . pour les nourrissons. On pourrait aussi obtenir de meilleurs résultats pour la santé. On doit déjà confirmer les excellents résultats de ces recherches pour maintenir la proposition que l'on vient d'énoncer. Peut-être le fluor-ion pourrait-il en apporter la preuve, même si elle n'est pas exacte en tous points. On doit observer de rigoureuses conditions de recherche et cette nécessité est capitale pour éliminer les lacunes expérimentales et stimuler les chercheurs à des travaux sur le fluor-ion et sur son influence sur la santé en général. Il s'agit ici d'un fait — la réduction de la carie dentaire par le fluor-ion — dont le succès est déjà assuré. Cependant, une explication complète manque encore pour le confirmer. Examinons donc, dans le but que l'on se propose, les éléments connus. Nous tirons nos renseignements d'une bibliographie publiée au-delà de 9,000 fois et d'expériences personnelles qui s'étendent sur des dizaines d'années. Dans toute une agglomération d'Etats européens, on a constaté par analyse que les éléments constituant le fluor-ion de l'eau sont peu importants. Seule, dans quelques régions bien connues, la teneur de l'eau en fluor-ion atteint 1.5 à 4.0 mg, par litre. En général, elle est de 0.5 mg par litre, sans compter ici toutes les eaux thermales. Plus on pénètre profondément dans le sol, plus cette teneur augmente. Avec elle, correspond la teneur du Ca, Mg, C1, etc. Après cela, il est solidement établi que:

1) *L'eau, qui se trouve en profondeur, est plus riche en fluor-ions et par suite en minéraux que l'eau de surface.*

De ce point établi avec certitude, on conclut que le sol et l'eau accessibles aux plantes est plus pauvre en minéraux que

* N. de la R. Nous recevons d'Allemagne un article sur le fluor d'un auteur, qui s'intéresse aux travaux entrepris au Canada sur la question.

le sol profond. Cette constatation s'explique par la culture intensive du sol pendant des siècles. En Angleterre, on fait part de recherches qui prouvent que le sol était riche en fluor à une époque ancienne. Des analyses de végétaux poussant sur le sol russe révèlent une teneur beaucoup plus élevée en fluor que celle des légumes poussant en Allemagne, Suède, France, Suisse, etc.

A ce propos, il existe toujours une corrélation avec les autres minéraux, peut-être même avec des éléments essentiels sur lesquels jusqu'ici ne s'est fait fait aucune recherche. C'est pourquoi, nous pouvons tirer une seconde conclusion:

2) *Le sol et l'eau qu'il contient est pauvre en fluor et en minéraux.* Il s'ensuit donc le fait suivant: les végétaux poussant dans ce sol et les produits minéraux qui en découlent (lait, viande) devraient être pauvres en fluor. Mais ces données ne signifient pas que le sol est aussi pauvre en minéraux. Loin de là.

Entre le sol et les plantes se trouve l'apport des minéraux qui rapporte au sol une partie des minéraux se dérobant à son insu. Même, si ces éléments, tels le zinc, le cuivre et le molybdène sont ici compris, les spécialistes peuvent ne pas être d'accord.

Pour nous, on peut établir par déduction que:

3) *Les végétaux et les produits animaux sont aujourd'hui pauvres en fluor.*

Les deux sont utiles à la nourriture de l'homme qui se compose d'éléments solides et liquides. L'analyse des aliments assimilés chaque jour montre que l'organisme reçoit quotidiennement (.52 mg de fluor, 80% par les solides et 20% par les liquides). C'est pour cela qu'il est fermement établi que:

4) *La nourriture de tous les jours est pauvre en fluor, vraisemblablement aussi pauvre en minéraux.*

Il est aisément compréhensible que les éléments de fluor assimilés chaque jour dans la nourriture, aussi variée soit-elle, changent insensiblement. Dans certaines régions, qui consomment beaucoup de fruits, de légumes . . . etc., la quantité de fluor absorbée est plus grande que dans celles qui consomment des pâtes, sans parler ici du poisson, dont la seule consommation suffirait à dépasser cette quantité. On doit aussi remarquer que cela dépend beaucoup de la quantité totale de la nourriture qui détermine le travail de résorption des éléments simples. Le témoignage réel du besoin le plus favorable en fluor que réclame l'organisme humain paraît donc être plus difficile à prouver. Ces indications dans les pays isolés varient entre 0.8 et 1.2 mg de fluor pour un litre d'eau, teneur à côté de laquelle, pense-t-on, existe une assimilation liquide de 1,600 ccm, donc une teneur en fluor aux environs de 1.4 à 1.8 mg pour l'eau et de 0.5 mg pour la nourriture solide, de telle sorte que l'ensemble offrirait une teneur en fluor de 1.9 et 2.3 mg, desquels 60 à 80% sont résorbés. C'est-à-dire entre 1.1/1.5 et 1.3/1.8 mg de fluor. Il est bien entendu que l'organisme jeune en rend plus que l'organisme adulte. Dépassée une certaine quantité, le reste s'élimine d'emblée.

La présence du fluor-ion dans le sol et dans l'eau que celui-ci contient, chez les animaux, les plantes et l'organisme humain ne tranche pas la question, à savoir si le fluor est un élément nécessaire à la vie. Jusqu'ici, cette question n'a pas pu être élucidée et prouvée expérimentalement. Encore une fois, il est extrêmement difficile de cultiver des plantes totalement dépourvues de fluor. McClendon a entrepris des expériences où il nourrit des animaux d'aliments dénués de fluor. Ces animaux ainsi nourris présentent des ravages considérables, qui, en présence du fluor, disparaissent. Mais alors on se demande, si des plantes ainsi cultivées ne sont pas privées aussi éléments nécessaires à leur action. D'un autre côté, ces recherches s'étendant jusqu'à des expériences faites sur des animaux et dans les cliniques également, sont à noter, car elles établissent avec certitude que le fluor est l'unique facteur

(et non seul moyen) de nourriture qui permet la réduction de la carie dentaire. Cette action entre en jeu à partir des doses quotidiennes de 0.35 à 0.5 mg de fluor. Le fait que l'on doit dépasser cet accroissement de minéraux est étudié de diverses manières, si l'on considère la carie dentaire dans sa réduction durant les 2 guerres mondiales, fait qui s'explique par la restriction de la consommation en hydrates de carbone (sucre, farine blanche) et qui n'a aucun rapport avec la teneur en fluor de l'eau et de la nourriture solide. Celle-la a toujours gardé le même niveau.

Grâce à ces constatations, on peut dire avec certitude qu'

5) *On n'a pas encore montré que le fluor était indispensable à la vie.* Mais ce qui est sûr, c'est que pour réduire la carie dentaire, il est nécessaire dans la nourriture de chaque jour.

On a constaté que l'action de fluor-ion pour réduire la carie dentaire commence par une assimilation quotidienne de 0.35 mg de fluor. Absorbé en grande quantité, soit environs 2.5 mg, le fluor peut causer la fluorose dentaire, c'est-à-dire une apparition de petites taches opaques sur l'émail des dents. Cette fluorose pourrait augmenter en proportion de la quantité du fluor absorbée et occasionner la destruction de l'émail. C'est pour cela que le domaine d'action physiologique du fluor, comme beaucoup d'éléments, est réduit. De plus grands dégats, dus à une assimilation prolongée, n'ont pas encore été observés. C'est du moins ce que prouvent les recherches évidentes faites dans le domaine du fluor, recherches qui remontent pour la plupart à 40 ou 50 ans. On pourrait aussi avec certitude montrer que le fluor n'a aucune influence sur le goître endémique c'est-à-dire sur un antagonisme éventuel du fluor-iode, qui ne se manifesterait qu'à la suite d'une consommation journalière dépassant 4.0 mg de fluor. Ce phénomène est dû au ralentissement de la quantité d'iode assimilée par les glandes thyroides. On peut tirer la conclusion suivante de recherches s'étendant sur une période de 10 ans et portant sur l'examen radiographies annuelles de fémur et des vertèbres de l'homme.

6) *L'assimilation quotidienne de fluor s'élevant de 0.35 à 2 mg n'a pas jusqu'ici, causé de dommages, même à la suite de consommation prolongée. Ce serait donc aux dires de certaines personnes une fluorose dentaire insignifiante.*

Mais nous devons nous demander d'expliquer l'action du fluor-ion pour être en état de réduire la carie dentaire.

Ce phénomène est encore obscur. Ce mécanisme a été expliqué de diverses manières. Toutefois les recherches ne font que commencer dans ce domaine. Les moyens uniques dont on dispose sont tous connus du lecteur; ils ont été mentionnés dans cet article.

Grâce au microscope électronique, on a montré que le fluor-ion se loge à l'intérieur de l'apatite; de là, il pénètre dans la totalité des tissus dentaires des dents permanentes. Dans l'apatite, un OH-ion est remplacé par un fluor-ion. Cette réaction n'est pas réversible. Au contraire du fluor qu'on met en surface (protection des dents en application topique) et que l'on enlève après 2 ou 3 ans. Cette réaction occasionne un durcissement externe de la dent et de l'émail, c'est-à-dire les tissus durs de la dent sont désormais protégés des acides hors de la cavité de la bouche. Comme Knappwost et bien d'autres ont réussi à le démonter, le fluor-ion occasionne dans son trajet par les glandes thyroides et hypophyse un courant de salive ascendant qui ne contient pas de mucine. C'est pour cela que se manifeste une intense action d'épuration, ainsi qu'une neutralisation des acides. Plus tard, il a été expérimentalement découvert (Bramstedt et collaborateurs) que, même en présence d'une faible concentration de fluor, le travail de destruction des hydrates de carbone est accéléré dans la cavité de la bouche. Grâce à cela, on observe une accomodation du débit des hydrates de carbone dans la salive de l'homme résistant aux caries. Ces obser-

vations ont été aussi établies (Kronke) par l'intermédiaire de papier chromatographique. Jusqu'à quel point la flore des bactéries subit-elle l'influence du fluor, nous ne pouvons pas encore le démontrer avec certitude. On croit connaître l'inhibition de la végétation des bactéries et ses produits de l'assimilation. Donc on peut dire:

7) *L'action réduite du fluor-ion sur les caries s'explique par ce qui suit: substitution du fluor-ion dans les tissus durs des dents, durcissement de ces tissus entraînant la protection contre l'attaque des acides. Ceci occasionne un courant de salive ascendant, un avancement de la substitution des hydrates de carbone et éventuellement une inhibition de la végétation bactérienne.*

A coté des découvertes thérapeutiques, mais bien incomplètes, sur le fluor-ion il y a des résultats dus à la pratique. Les recherches effectuées durant 10 années dans le centre des Etats-Unis et du Canada au sujet de la fluoruration et l'eau potable ont en même temps mis en évidence une inhibition des attaques des caries d'environ 60%.

Aujourd'hui, environ 1,500 municipalités des Etats-Unis, soit 31 millions de personnes utilisent cette eau potable. Les établissements d'Europe: Allemagne, Belgique, PaysBas, Suède et Angleterre disposent encore d'aucune fluoruration, si ce n'est que tout récemment.

L'établissement à Cassel-Wilhemshohe, qui fonctionne depuis 3 ans, peut déjà prouver, dans ses rapports annuels une réduction certaine (plus de 50%). La consommation de pastilles, qui, la plupart du temps, n'agissent qu'au bout d'une année montrent aussi une inhibition de la carie dentaire. On n'attache encore aucune importance aux recherches effectuées en Suisse sur l'action du fluor incorporé au lait et au sel de cuisine.

Les différents points de vue ici étudiés démontrent clairement que l'importance biologique du fluor-ion commence vraiment à se manifester. Pour pouvoir connaître ce qui a été fait, on a besoin de résultats positifs ou négatifs concernant l'ensemble de ce problème. La recherche se poursuit et elle a pour la première fois ouvert un horizon vers une action préventive qui ne comprend pas seulement le domaine dentaire, mais qui, par la démonstration de l'action qu'exerce le fluor-ion sur le rachitisme et les tumeurs, devrait intéresser la médecine.

Bibliographie

de l'ensemble de la littérature concernant le fluor et ses domaines.

Le travail scientifique d'une question traitant sur ce domaine nécessite une étude approfondie de la littérature du monde. Pour faciliter la tâche de ceux qui doivent assurer ce travail demandant beaucoup de temps, nous avons réuni ces travaux de littérature depuis vingt ans.

Notre collection contient, outre l'original paru en 1950, un fichier comprenant tous les travaux essentiels qui ont trait avec le problème du fluor. Il y a en ce moment 9,000 fiches. Elles sont cataloguées d'après leurs rapports précis, et publiées successivement. Les brochures suivantes sont déjà parues:

Brochure 1: Fluor et:

1. Pâte dentifrice
2. Topic application
3. Perte de l'émail
   Action des acides

4. Permeabilité
5. Absorption externe
6. Gomme à mâcher, eau pour la bouche
7. Pulpe
8. Salive
9. Bactéries

Brochure 2: Nourriture et:

1. Carie, Santé
2. Carie expérimentale
3. Sucre
4. Pain
5. Calcium
6. Fluor
7. Magnesium
8. Vitamine
9. Vanadin
10. Chlorophyle

Brochure 3: Fluor et:

1. Pastilles
2. Sel de cuisine
3. Lait
4. Mottled enamel
5. Glande thyroïde
6. Métabolisme
7. Excrétion
8. Alimentation
9. Teneur des tissus
10. Sang

Brochure 4: Fluor et:

1. Analyse
2. Livres
3. Rachitisme
4. Tumeur
5. Typhus
6. Paradontose
7. Tuberculose

Les brochures suivantes sont en préparation:

Brochure 5: Fluor et:

1. L'abstrait
2. Effet toxique

Brochure 6: Fluor et:

1. Eau potable

Brochure 7: Fluor et:

1. Chimie
2. Combinaison organique
3. Insecticides

Brochure 8: Fluor et:

1. Statistiques
2. L'activité de la carie dentaire
3. Investigation sur la carie
4. Terre
5. Plantes
6. Animaux

Les brochures, jusqu'a épuisement, peuvent être achetées moyennant une somme de 5 D.M. chez: Dr Hans Joachim Schmidt, Stuttgart-Degerloch, Leonorenstrasse, Allemagne.

Nouvelles de l'Université de Montréal

Démission du docteur Ernest Charron

Le docteur Ernest Charron, qui était doyen et directeur des études de la Faculté de chirurgie dentaire depuis 1944, a pris sa retraite en mai dernier pour cause de maladie.

Le docteur Charron avait réorganisé la faculté en augmentant le nombre des membres du personnel enseignant et en envoyant plusieurs de ses professeurs suivre des cours de spécialisation de longue et de courte durée aux Etats-Unis. Il avait, de plus, intéressé des fondations américaines aux progrès de la faculté et pris part à toutes les activités en rapport avec l'enseignement dentaire, tant aux Etats-Unis qu'en Europe.

Le décanat du docteur Charron a été des plus fécond et a marqué une étape des plus importante dans l'existence de la faculté.

Le docteur Paul Geoffrion est nommé doyen

Le successeur du docteur Charron au décanat de la faculté est le docteur Paul Geoffrion qui conserve la direction du service d'orthodontie et qui continue sa pratique privée comme autrefois.

Le docteur Paul Geoffrion a terminé ses études dentaires à l'Université de Montréal en 1918. Il a passé trois mois à l'Université Harvard et un an à l'Université Columbia où il étudia l'orthodontie avec le docteur Martin Dewey. Plus tard, il prit des cours spéciaux avec les docteurs V. Hugo Jackson, de New York, et J. V. Mershon, de Philadelphie.

Le docteur Geoffrion est membre de plusieurs sociétés scientifiques d'Amérique et d'Europe, entre autres de "l'American Society of Orthodontists," de New York, de la "Society of Orthodontists," "l'Academia International de Odontologica," la Société Dentaire de Haïti (honoraire), de l'Académie Pierre Fauchard (honoraire), la Société Dentaire de Montréal, "l'International College of Dentists," "l'American College of Dentists," la Société de Stomatologie de Turquie (honoraire), la Société d'Odontologie de Paris (honoraire), la Société Française d'orthopédie dento-maxillo-faciale, le Club de Morphologie faciale d'Europe.

Le docteur Geoffrion a donné de nombreuses conférences dans les Amériques et en Europe (en 1955, en France et en Turquie); il a publié de nombreux articles (sa plus récente publication est un volume édité chez Prélat, en France, intitulé "La méthode de J. E. Johnson — Twin Wire Arch").

Depuis 1944, le docteur Geoffrion était professeur titulaire et chef du service d'orthodontie et vice-doyen de la faculté.

Le docteur Jean-Paul Lussier, vice-doyen et directeur des études

Le Conseil des Gouverneurs de l'Université de Montréal vient de nommer le docteur Jean-Paul Lussier vice-doyen et directeur des études de la Faculté de chirurgie dentaire. Le docteur Lussier agissait déjà comme secrétaire du Conseil de la faculté depuis 1955.

Après avoir terminé ses études à la faculté dentaire en 1943, le docteur Lussier s'inscrivit à la Faculté des sciences où il a séjourné jusqu'en 1946, pour y étudier les mathématiques, la physique, la chimie organique, la chimie inorganique et la biochimie, et y obtenir son B.Sc. De 1952 à 1954, il a passé sa maîtrise en sciences (physiologie) après des études poursuivies à l'Université de Californie, avec une bourse de l'Université de Montréal, une bourse du Comité des Recherches de l'Association dentaire canadienne et une autre du Ministère fédéral de la Santé.

Le docteur Lussier, à la faculté dentaire, a agi comme professeur de matière médicale (1944-1945). A la Faculté de médecine, il a rempli les charges d'assistant-professeur et de professeur agrégé de physiologie. Il fait partie de la Société Dentaire de Montréal, de la Société de Biologie de Montréal, de "l'American Academy of Dental Medicine," de "l'American College of Dentists," de "l'American Institute of Dental Medicine" et de "l'American Association for Advancement of Science." Il est secrétaire général de la Revue Canadienne de Biologie et membre du Conseil National de Recherche (Comité des recherches dentaires). Il a publié de nombreux communiqués dans la Revue Canadienne de Biologie, le Journal de l'Association dentaire canadienne, dans la Revue Médicale de l'Université de Montréal.

Le docteur Zdének Mézl nommé professeur agrégé de pathologie dentaire

Le docteur Mézl est diplômé de l'Université de Prague, Tchécoslovaquie, où il a obtenu son diplôme de médecin en 1931; en 1934, il obtenait son titre de stomatologiste à la clinique stomatologique de l'Université de Prague.

Il a enseigné la pathologie dentaire et la périodontologie, comme assistant-professeur (privat docent), à la clinique stomatologique de la Faculté de médecine de Prague, où il devint professeur agrégé en 1949. De 1949 à 1952, il enseigna l'histologie et la pathologie dentaires à l'Université de Groningen, en Hollande, comme professeur agrégé ou "conservator."

En 1952, il vint au Canada et s'inscrivit comme étudiant spécial à l'Université d'Alberta où il obtint son D.D.S. en 1957.

Le docteur Mézl est bien connu dans les milieux scientifiques européens. Il a donné de nombreuses conférences à Paris, Genève, Amsterdam, Utrecht, Groningen, Bruxelles, Québec, Montréal.

Il a publié de nombreux articles dans les revues scientifiques européennes.

A l'Université de Montréal, le docteur Mézl donne des cours de pathologie dentaire, s'occupe de l'enseignement clinique de la périodontie et poursuit ses recherches sur la pathologie dentaire.

Le docteur Henryk Silbert, nommé assistant-professeur de dentisterie opératoire

Après avoir suivi des cours de médecine à Cracovie, Pologne, le docteur Silbert a obtenu son diplôme de licencié en science dentaire de la faculté dentaire de l'Université Libre de Bruxelles, en 1948. De 1948 à 1951, il remplit un poste de clinicien à l'Institut médical, Service Dentaire à la Hestre (Belgique). En 1952, il s'inscrivit à l'Université de Montréal où il obtint son D.D.S. en 1957, en plus d'avoir passé seize mois au service d'orthodontie, à un cours postscolaire.

Le docteur Silbert est attaché au service de dentisterie opératoire et s'occupe plus spécialement d'endodontie.

Conférence de pédagogie dentaire

Les 7 et 8 novembre, à l'intention des professeurs des facultés dentaires des Universités de Montréal et McGill, le Conseil d'Enseignement dentaire de l'Association dentaire canadienne avait organisé des séances d'études pédagogiques, qui eurent lieu, une journée, à l'Hôpital Général de Montréal et, l'autre, à l'Université de Montréal. La première journée était consacrée aux deux thèmes: "En quoi consiste un bon enseignement?" et "Techniques de l'enseignement." La deuxième: "Test et examens" et "Administration d'un programme d'enseignement professionnel." Les conférenciers de la première journée — première partie — furent le professeur David Monroe, chef du département d'enseignement de l'Université McGill, et le révérend Père Noël Mailloux, O.P., directeur du département de psychologie de l'Université de Montréal. Ceux de la deuxième partie: le professeur C. Wayne Hall, de l'Ecole Normale du Collège MacDonald et le professeur René Paquette, professeur de sciences de l'Ecole Louis Hébert.

Le programme était présenté de façon à fournir à des petits groupes de professeurs des facultés dentaires l'occasion de discuter certains aspects des causeries et de revenir exposer leurs observations à des panels composés d'éducateurs de carrière. Pour le premier thème, le docteur F. Cyrill James, principal de l'Université McGill, le docteur A. C. Lewis, doyen de l'Ecole de pédagogie de l'Université de Toronto; monsieur Yvon Blanchard, secrétaire-adjoint à l'Immatriculation de l'Université de Montréal; le professeur David Monroe et le révérend père Noël Mailloux. Pour le deuxième thème, le docteur A. C. Lewis, monsieur Léon Lortie, directeur de l'extension de l'Enseignement de l'Université de Montréal; le professeur Kenneth Hare, directeur de l'Institut de géographie de l'Université McGill, les professeurs C. Wayne Hall et René Paquette.

Les conférenciers de la deuxième journée étaient le docteur C. E. Smith, professeur de pédagogie de l'Université McGill, et le professeur J. St-Pierre, de l'Institut de mathématique de l'Université de Montréal, le docteur Lloyd G. Stevenson, doyen de la Faculté de médecine de l'Université McGill et le docteur Jean-Paul Lussier, vice-doyen et directeur des études de la Faculté de chirurgie dentaire de l'Université de Montréal. Les membres des panels étaient le docteur A. C. Lewis, monsieur Abel Gauthier, vice-doyen et directeur des études de la Faculté des sciences de l'Université de Montréal, le professeur David Monroe, le docteur A. E. Smith, le professeur J. St-Pierre, le docteur H. N. Fieldhouse, doyen de la Faculté des arts et des sciences de l'Université McGill, Monseigneur Irénée Lussier, P.D., Recteur de l'Université de Montréal, le docteur Roger Dufresne, vice-doyen de la Faculté de médecine de l'Université de Montréal, le docteur Lloyd G. Stevenson et le docteur Jean-Paul Lussier.

Le but de ces conférences est de familiariser les professeurs des facultés dentaires avec les principes généraux de pédagogie. Des séances semblables avaient déjà eu lieu à Toronto, Alberta et Dalhousie.

La Fondation Kellogg défraie une partie des déboursés occasionnés par l'organisationde ces assises pédagogiques.

Les docteurs James McCutcheon, doyen de la faculté dentaire de l'Université McGill et le docteur Jean-Paul Lussier s'étaient occupés d'organiser ces réunions.

Nouvelles de l'Association

Le docteur Paul Geoffrion nommé doyen à l'Université de Montréal

On vient d'annoncer que le docteur Paul Geoffrion vient d'être nommé doyen de la faculté de chirurgie dentaire de l'Université de Montréal. Le docteur Jean-Paul Lussier a été nommé vice-doyen et directeur des études à la même faculté. Le docteur Geoffrion a fini ses études à l'Université de Montréal en 1922 et il fait partie de personnel enseignant depuis plusieurs années et il est chef du service d'orthodontie. Le docteur Lussier a fait des études post-universitaires à l'Université de Californie de 1952 à 1954.

Nomination d'un assistant-secrétaire

M. Kenneth L. Croft vient d'être nommé assistant-secrétaire de l'Association dentaire canadienne. M. Croft a fait ses études à l'Université Western (Ontario), où il a obtenu son baccalauréat des arts (journalisme) en 1952. Depuis ce temps, il occupait un poste important dans le monde des affaires. L'entrée en fonction de M. Croft à l'Association a pris effet le 15 octobre.

Congrès de la Fédération dentaire internationale, à Rome

Environ 100 dentistes canadiens ont assisté au congrès international de Rome, en septembre dernier. A peu près 10,000 personnes venant de 72 pays différents ont pris part aux assises du congrès. Il y eut une audience spéciale du Pape dans la basilique de St-Pierre pour les congressistes, dimanche après-midi, le 8 septembre. Sa Sainteté a parlé en français et il a souligné les progrès accomplis dans le domaine de la pédodontie, en appuyant sur l'importance de la prévention des maladies dentaires dans le monde entier. Il a donné la bénédiction papale à tous les membres de la profession dentaire. Le maire de Rome, les officiels du gouvernement italien et plusieurs embassades ont offert des réceptions de tous genres. Les évènements sociaux principaux ont été un banquet officiel, une représentation spéciale d'opéra et un grand bal. Il y eut des centaines de conférences, de démonstrations, de cliniques et d'expositions au cours de cette semaine et tous les domaines de la dentisterie ont été touchés. Le docteur George A. Morgan, de Toronto, a donné une conférence sur la chirurgie buccale, qui a été fort remarquée. Le docteur Thure Brandup-Wognsen, de Stockholm, fut élu à l'unanimité président de la F.D.I. Le prochain congrès aura lieu à Cologne, Allemagne, en 1962.

Quatre-vingt-dix-huitième congrés annuel de l'Association dentaire américaine, à Miami

Le congrès annuel de l'Association dentaire américaine a eut lieu à Miami et à Miami Beach, du 4 au 7 novembre. Un nombre extraordinairement considérable de dentistes étrangers ont assisté à ce congrès. Les membres de l'Association dentaire canadienne étaient cordialement invités et ont pu s'inscrire en présentant leur carte de membre de l'A.D.C. Il y eut un diner pour les dentistes étrangers dans la salle Mona Lisa, à l'Hôtel Eden Roc, à Miami Beach, mardi, le 5 novembre. Les dentistes d'autres pays que les Etats-Unis étaient reçus à l'Hôtel Fontainebleau, où un local était réservé à cette intention.

Commission d'enquête sur la dentisterie aux Etats-Unis

La première réunion de la commission d'enquête a eu lieu au secrétariat du Conseil américain d'enseignement, à Washington, D.C., le 7 août dernier. Plus tôt, on avait annoncé les noms des commissaires, dont quatre font partie de la profession dentaire et onze représentent le public. Les membres de la Commission sont: le docteur Arthur S. Flemming de l'Université Ohio Wesleyan, agissant comme président; le docteur Otto W. Brandhorst, secrétaire du Collège américain des Dentistes; M. George Bugbee, de New-York, président de la Fondation de Santé nationale; M. W. Howard Chase, de New-York, président de la Communications Counselors, Inc; Mlle Anne Fillmore, de New-York, directrice générale de la Ligue nationale des Infirmières Inc; le docteur Willard Fleming, de San Francisco, doyen de la faculté dentaire de l'Université de Californie; le docteur Don W. Gullett, secrétaire de l'Association dentaire canadienne; le docteur Herman E. Hilleboe, d'Albany, commissaire de service de santé de l'Etat de New-York; M. Lawrence A. Kimpton, chancelier de l'Université de Chicago; M. Charles P. McCormick, de Baltimore, président du conseil de la Cie McCormick; M. Lee W. Minton, de Philadelphie, président international de la Glass Bottle Blowers Association des Etats-Unis et du Canada; M. Franklin D. Murphy, chancelier de l'Université de Kansas, Lawrence, Kansas; le docteur Percey T. Phillips, de New-York, fiduciaire de l'A.D.A.; M. Philip N. Powers, de Clayton, Miss., président de la Cie Internuclear; M. Henning W. Prentis Jr, de Lancaster, Penn., président du bureau de direction de Armstrong Cork Co. L'enquête, que commença

cet automne prendra deux ans avant d'être complété; elle coûtera $400,000. On enquêtera sur quatre points; enseignement, recherches, exercice et santé dentaires. La Commission est composée de personnalités marquantes dans l'industrie, le monde des affaires, le domaine de la santé, l'enseignement et le travail. Son travail consistera à trouver des moyens d'améliorer le service dentaire du public.

Progrès de la fluoruration aux Etats-Unis

1) La ville de Minneapolis a commencé à fluorurer l'eau de son aqueduc, le 6 août dernier. Sa ville-soeur St Paul, avec une population de 335,000, utilise cette mesure depuis 1952.

2) On utilise la fluoruration dans 1532 villes américaines et ainsi 32,319,603 personnes en bénéficient.

3) Une enquête (Roper Poll) entreprise auprès de l'opinion publique des Etats-Unis montre que la population est en faveur de cette mesure de santé publique. Environ 53% des gens se sont prononcés en sa faveur, 18% contre et 29% ont dit ne pas savoir.

L'Organisation Mondiale de la Santé approuve la fluoruration

L'Organisation Mondiale de la Santé vient de déclarer officiellement que l'emploi de l'eau potable, qui contient du fluor dans le but de prévenir la carie dentaire, est sûr, efficace et pratique. Après avoir étudié des centaines d'organisations pour fluorurer l'eau dans 17 pays différents, un comité de l'OMS a fait part que l'utilisation du fluor dans l'eau potable était approuvée par des officiers de santé publique dans le monde entier.

Aux Etats-Unis, 32 millions de personnes, residant dans 1500 municipalités différentes, boivent de l'eau fluorurée. Seize autres pays ont commencé à prendre des mesures semblables.

Le comité de l'OMS fait remarquer que les résultats atteints dans tous les pays qui se servent de la fluoruration sont tous les mêmes. Les caries dentaires dans les dents permanentes des enfants ont diminué d'environ 60%, tandis que dans les dents primaires des enfants, la diminution est de 50% à 60%.

Le rapport déclare: "Aucune autre mesure de santé publique, avant d'être mise en oeuvre, n'a été l'objet d'autant de recherches et n'a exigé plus de temps et d'argent. L'OMS recommande en tout temps et partout où c'est possible, sans aucune réserve, la consommation d'eau contenant du fluor. On recommande que cette eau contienne une partie de fluor pour 1 million de ses parties.

Référendum en Alberta sur la question de fluoruration

Les élections municipales ont eu lieu, en Alberta, le 16 octobre dernier, et les villes de Calgary, Edmonton, Red Deer et Medicine Hat en ont profité pour tenir un référendum sur la question de fluoruration. Selon une loi passée à la Législature de cette province, il y a plus d'un an, les municipalités qui projettent d'adopter la fluoruration doivent soumettre la question à un référendum et, pour être adoptée, cette mesure doit recevoir les deux tiers des votes. Red Deer s'est prononcé pour, par un vote de 1001 contre 424. Dans la ville d'Edmonton, 30,420 citoyens ont voté pour la fluoruration et 16,626 contre, établissant un pourcentage de 64.7%, quand la loi exigeait 66 2/3% pour l'adoption de cette mesure. A Calgary, le vote s'établit aussi: 26,385 votes défavorables, 26,158 favorables. A Medicine Hat, 1,943 pour, 1,549 contre.

Les circonstances qui entourent le vote dans un référendum varient d'une ville à l'autre. Le résultat dépend sur l'éducation du public. Les sociétés dentaires ont mené des campagnes merveilleuses pour instruire le public sur la question et elles furent aidées par des groupes de profanes gagnés à la cause. Les résultats montrent qu'il est bien difficile d'éduquer la population dans les grandes villes. A notre avis, la tenue d'un référendum pour décider du sort d'une mesure de santé publique est une mauvaise affaire. Un référendum fournit l'occasion à des démagogues d'énoncer des opinions ridicules qui sèment de la confusion dans l'esprit du public, tandis que les gens sérieux, qui connaissant la question ne peuvent qu'amener des faits que des recherches scientifiques ont prouvés. Les autorités devraient décider elles-mêmes de ces questions et prendre leurs responsabilités. On ne devrait pas se servir de ces mesures de santé publique pour en faire des tremplins politiques.

Le docteur Charles M. Whitworth, nommé délégué de la Colombie britannique

On vient d'apprendre officiellement que le docteur Charles Whitworth de Vancouver, vient d'être nommé représentant de la Colombie britannique au Bureau des Gouverneurs de l'Association dentaire canadienne, en remplacement du docteur William Miller. Le docteur Whitworth a fini ses études dentaires au North Pacific Dental College, Oregon, en 1933 et il a toujours exercé à Vancouver. Il a occupé différents postes dans les organisations dentaires de sa province et il est actuellement

président du Collège des Chirurgiens-Dentistes de la Colombie britannique.

Le docteur J. W. Neilson est nommé doyan à l'Université de Manitoba

En juin dernier, le docteur Neilson a été nommé doyen de la nouvelle faculté qui doit être construite à Winnipeg. Il est diplômé de la faculté de chirurgie dentaire de l'Université d'Alberta (1941) et il a exercé à Edmonton durant plusieurs années, faisant en même temps partie du corps professoral de l'Université. Ensuite, il a accepté un poste à la faculté dentaire de l'Université de Washington, à Seattle, jusqu'à maintenant. Le docteur Neilson est rendu à Winnipeg depuis le début de novembre.

La nouvelle faculté du Manitoba s'élabore peu à peu

Le docteur Neilson vient de faire rapport dans le Bulletin de l'Association dentaire du Manitoba des progrès réalisés à date par la faculté dentaire de l'Université du Manitoba.

1. En général, tout est encore à la période d'organisation.
2. Le curriculum pré-dentaire de l'Université du Manitoba a été conçu dans les grandes ligues fixées par le Conseil d'Enseignement dentaire de l'Association dentaire canadienne.
3. Le docteur Neilson, accompagné d'un architecte a visité plusieurs facultés den-

Congrès international à Bruxelles, du 11 au 15 juin 1958

A l'occasion de son 10e anniversaire, la Société Scientifique de Stomatologie de Belgique organise dans le cadre de l'Exposition Universelle et Internationale de Bruxelles 1958, un congrès international de stomatologie.

Ce congrès, honoré du patronage du Ministre de la Santé Publique et de la Famille, tiendra ses assises du 11 au 15 juin 1958 dans les locaux de la faculté de Médecine de l'Université Libre de Bruxelles, 115, boulevard de Waterloo. Les démonstrations et tables cliniques se feront à l'hôpital universitaire de St-Pierre.

En plus de nombreuses communications, le programme comprendra les rapports suivants:

—La guérison des plaies buccales, par M. le Professeur H. Brabant et le Dr O. Alexandroff.

—Les moyens de rétention des prothèses complètes, par M. le Professeur L. Charon.

—Les moyens de rétention des prothèses partielles, par le Dr Massa.

—Evolution de la Stomatologie dans le cadre de la sécurité sociale, par M. le Professeur R. Boisson.

Le texte de ces rapports sera publié dans les "Archives de Stomatologie" et distribué avant le congrès aux participants.

Le comité d'organisation et le comité des dames préparent un ensemble de manifestations culturelles, artistiques et récréatives qui s'annonce des plus attrayant.

Enfin, l'Exposition Universelle et Internationale de Bruxelles 1958, qui fera de Bruxelles un carrefour du monde, patronne notre organisation et offre de nombreuses facilités aux congressistes, dont l'accès gratuit à l'Exposition ainsi qu'une priorité de logement.

Le montant de l'inscription est fixé à 750 frs. belges pour les congressistes (300 frs. pour les personnes accompagnant).

Les confrères qui désirent présenter une communication ou une table clinique sont priés d'en aviser le secrétaire avant le 1er février 1958.

Toute correspondance peut être adressée au secrétaire:

Dr Serge DAMSEAUX, 14, rue Léopold Procureur, Jette-Bruxelles, Belgique.

taires des Etats-Unis avant d'arrêter les plans définitifs de la nouvelle construction.

4. La construction commencera au printemps de 1958.

5. Les plans exigeront:
   a) un édifice de 46,000 pieds carrés.
   b) des facilités pour loger 30 étudiants par classe.
   c) un personnel enseignant à temps complet se chiffrant de 15 à 18 (dont 7 ou 8 seront en sciences de base).
   d) un personnel convenable de professeurs à temps partiel.

6. La faculté recevra avec reconnaissance des volumes et des revues qu'on voudra bien lui envoyer pour commencer sa bibliothèque.

Déclaration du ministre de la Santé Nationale

L'Honorable Monteith, ministre de la Santé nationale, vient de Faire la déclaration suivante à la presse:

"Quand la question sera mieux connue, le Ministère de la Santé Nationale et du Bien-Etre Social a confiance que la fluoruration marquera une étape importante dans la lutte commencée depuis longtemps contre la carie dentaire."

Volumes de la bibliothèque

On a commencé à se servir d'une nouvelle méthode pour l'expédition par courrier postal des volumes de la bibliothèque.

Le Ministère des Postes a permis à l'Association d'expédier ses livres à tarif réduit, lui permettant aussi de réaliser des économies et de libérer de frais de poste de retour ceux qui empruntent des livres. Il faut retourner les livres en se servant de l'emballage qui a déjà servi, en y laissant intacte les collants de la postes et en utilisant les étiquettes fournies à cette fin. L'expéditeur n'a pas à indiquer son adresse et à payer de frais de poste.

On croit que ce système augmentera considérablement les emprunts de volumes de la bibliothèque.

Les journées dentaires internationales de Paris

Le secrétaire-général des 31e journées dentaires internationales de Paris invite cordialement les membres de l'Association à prendre part à ce congrès qui aura lieu à Paris du 25 novembre au 1er décembre. Pour tous renseignements, on s'adresse à: Pierre-André Robert, secrétaire-général, 10 rue de l'Isly, Paris 8.

Acquisitions récentes de la bibliothèque

AMERICAN DENTAL ASSOCIATION. BUREAU OF DENTAL HEALTH EDUCATION: Patient education illustrated. Trans-vision wall chart. 1955.

ANDERSON, W. A. D.: Synopsis of pathology. 4th ed. 1957. 829 p. illus.

AUSTIN, K. P., and LIDGE, E. F.: Partial dentures, a practical textbook. 1957. 227 p. illus.

BRITISH SOCIETY FOR THE STUDY OF ORTHODONTICS: Transactions. 1955. 192 p. illus.

BUNTING, R. W.: Oral Hygiene. 3rd ed. 1957. 334 p. illus.

BURKET, L. W.: Oral Medicine. 3rd ed. 1957. 588 p. illus.

DENTAL CLINICS OF NORTH AMERICA: Symposium on emergencies in dental practice. July 1957. By James R. Cameron. Pages 335-617 illus.

EUROPEAN ORTHODONTIC SOCIETY: Report of the 31st Congress. 1955. 348 p. illus.

FINN, S. B., and others: Clinical pedodontics. 1957. 644 p. illus.

GERSKOFF, A., and GOLDBERG, N. I.: Implant dentures: indications and procedures. 1957. 256 p. illus.

GILLES, Sir H. and MILLARD, D. R.: The principles and art of plastic surgery. 1st ed. in two volumes. 1957. 652 p. illus.

HERON, W. T.: Clinical applications of suggestion and hypnosis. 3rd ed. 1957. 165 p.

LANKE, S.: Influence on salivary sugar of certain properties of foodstuffs and individual oral condition. 1957. 56 p. tables.

MILLER, S. C.: Oral diagnosis and treatment (oral medicine). 3rd ed. 1957. 977 p. illus.

MONHEIM, L. M.: Local anesthesia and pain control in dental practice. 1957. 300 p. illus.

MUHLER, J. C., and HINE, M. K.: A symposium on preventive dentistry with specific emphasis on dental caries and periodontal diseases. 1956. 266 p. tables and fig.

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Première rangée g. à. d.: le docteur Gérard de Montigny, professeur titulaire à l'Université de Montréal, le docteur James McCutcheon, doyen de la faculté dentaire de McGill, le docteur A. C. Lewis, doyen de l'Ontario College of Education, le docteur Paul Geoffrion, doyen de la faculté dentaire de l'Université de Montréal, le docteur C. E. Smith, professeur de pédagogie, Université McGill, le professeur David Munroe, directeur du Département de Pédagogie, Université McGill, le docteur Jean-Paul Lussier, vice-doyen de la faculté dentaire, Université de Montréal.

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